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AMERICAN BEE JOURNAL

Vol. LXXVI—No. 3 Hamilton, Illinois, March, 1936 Monthly, $1.00 a Year

Supersedure in Packages

By C. E. Phillips,
Ontario.

SUPERSEDURE is an outstanding unsolved problem between the shipper and the receiver of package bees. It should be solved. It is possible that part of the blame lies with each, and it is also possible that only two or three conditions are responsible.

My most amazing experience as a young beekeeper was that of placing ripe queen cells in separate Sen Sen boxes until the queens emerged and became active; then, on putting them together, to find that a battle royal took place between two bees that had never before laid eyes on each other.

Why should they fight? Just instinct; that's all. When the shipper goes among his queen-rearing hives and collects queens, doubtless they are carried in a receptacle which permits them to be aware of the close proximity of a dauntless adversary. Instinct fires them into racing up and down the interior of a roughly bored and screened cage; passing through narrow, slivery passages; brushing antennae into numbness; grazing compound eyes into partial blindness.

This may not be the end since, when inserted in a shipping cage among strange bees, gallantry turns to fear and so, perhaps for days, they race about in an environment quite different from the soft wax combs. At least dipping the cage in hot wax would help to pad the cells of the poor creatures.

Let us now ask how, in the darkness of the hive, does a queen determine whether a cell is polished and prepared for an egg? How does she determine whether or not it contains an egg? There are just two parts of her anatomy fitted to convey this information to her brain—her eyes and her antennae. The eyes perform but a single function and are doubtless of little value in egg laying. The antennae are organs of scent, of sensitive feeling, and possibly of communication. There may be other senses of which we are unaware.

With this thought in mind, experiments were tried on three queens by "dehorning" the antennae into varying lengths. Two of them were superseded in from four to six weeks. These had been wintered queens and young. The third "dehorned" one was cut between the head and the bend, the shortest of all three, and was still alive on October 19th and will probably survive the winter. This queen was an early one, reared in spring, and the colony strength was only fair all summer. These operations were done after the honeyflow, to avoid the swarming season.

My method of introducing packages would be considered rough and reckless when compared with the usual instructions. On arrival they are first fed sugar syrup through the screen. If the weather is too cold for flying they are kept till the next day. Then, the hive being ready, I remove the feeder and draw out the queen cage with as many bees as possible, placing it among the frames just as it is. Three or four frames are removed from the hive which leaves the queen cage with the remaining six.

Then I place the package on a solid foundation and cut away the screen making an opening the full size of the package. If this is done without jarring, the cluster remains together and, with a jerk, they are dumped into the hive and onto the frames. The bees accept this as they do when coming out of a swarm cluster and go right to work.

The empty package is taken away so flying bees will not cluster in it from the queen scent. Two days later the queen is released by hand. Dumping the bees out in this way avoids the unpleasant experience of finding later most of the bees still clustering or building comb right in the cage and the queen chilled from being alone. When the cage is placed in the hive this is apt to result.

Many preach under the text of "leave those packages alone" and the following experience convinces me that there is some merit in the theory. Two spare queens were included in packages and were introduced into a divided hive body, each side of which contained four combs of bees, brood, and honey from over-wintered colonies. In order to work either nucleus without disturbing the other, two half covers were hinged on the center partition, all made of beaver board.

On the third day after installation, to test the safety of introduction, one of the attendant bees was liberated and the bees on the outside of the cage paid no attention to her. A second attendant was liberated and still all seemed tranquil until the wind blew the half cover down on the cage killing two or three bees. Immediately every one of the fifteen or more bees on the cage started strenuous efforts to reach the imprisoned queen with their stingers.

The cage was put back and the next day all seemed peaceable. The queen was liberated on a comb lying flat on the others. Again the wind blew the board down after the queen had been crawling among the bees for fully forty-five minutes and she was immediately balled and had to be re-caged. Finally she was liberated through a match hole forced through the candy.

The receiver of package bees is never content until he knows the queens have been liberated and are laying. In a large apiary, speed and short cuts are necessary. When bees are smashed by hasty methods of examination, the others are quick to scent it and those nearest the object attacking, jump into active combat. The smashing may occur after the queen has been observed to be laying and yet she may be balled and crippled without the knowledge of the keeper. Then she will be soon superseded.

I have made frequent and careful examination of package bees without any trouble and have generally liberated the queen the next day but it must be done without killing a bee. So the "leave those packages alone" advocates should add "unless you have time to be careful."

On September 13th, 1934, two colonies were driven into large cages with the Acid Smoke Box. These were kept confined for several days and fed generously with sugar syrup. My notes show that one queen cage, containing the queen was hung about three inches into the cluster. The other package being a much stronger colony, I felt it safer to place the screen side of the queen cage downward on top of a screened opening made in the top of the cage for feeding, the queen cage being on the outside instead of hanging among the bees.

Except for this difference, the two packages were treated alike. In the spring of 1935 I found the first colony had superseded their queen, which must have been about October 18th. At this late date mating was impossible and the young queen's eggs produced only drones. Now this package of bees did not have the exposure of being shipped from the South. No reflection could be made against the shipper and rearer of queens. No "leave those packages alone" interference could be blamed and yet the queen that was buried deep in the cluster was superseded, while the one on top headed the strongest colony in bees and honey production in 1935.

When bees cluster either in swarming or in packages they have the liberty of boring into the heart or returning to the outer surface according to desire while the caged queen and attendant bees are imprisoned in a smothering compact. I have often observed the four or five attendants caged with the queen, to be dead. When we come to think of it, isn't it wonderful that the queen survived at all? The above experiment is only one cage against another and does not prove anything, but I consider it worthy of large scale experimentation by shippers.

Frozen Fruit Salad

(Serves 12)

½ cup mild honey
¼ cup lemon juice
2 egg yolks
2 tablespoons sugar
2 tablespoons flour
½ teaspoon mustard
¼ teaspoon salt
1½ cup whipping cream
1 cup seeded white grapes or
1 cup diced apples
1 cup crushed pineapple
1 cup diced apricots
1 dozen marshmallows
cut in small pieces

Combine sugar, flour, mustard and salt. Add egg yolks and beat until smooth. Add honey and lemon juice and cook over hot water, until smooth and thick, stirring constantly. Chill then fold in the fruits which have been well drained, and the whipped cream. Freeze. Serve on crisp lettuce and garnish with salad dressing or whipped cream.

Ulysses G. Stanley

My husband has been a regular subscriber of the journal since 1901. On January 8, he passed away. He was employed by The Pennsylvania Railroad Company as a telegraph operator forty-two years. He worked at the home office thirty-eight years until August, 1935.

He became interested in bees through a neighbor, Mr. W. S. Forney, and purchased ten chaff hives, which produced enough the first year to pay for themselves. From this, his interest grew more intense. Soon he was the proud owner of fifty colonies and much interested in this fascinating work. Mr. Sanley leaves a large collection of bee books.

Mrs. Anna P. Stanley,
Pennsylvania.

This may be served as a dessert also. Pile lightly in sherbet glasses, garnish with whipped cream and dot with maraschino cherries.

Mrs. Benj. Nielsen,
Nebraska.

Virginia Conditions Met Everywhere

This photo of myself and bees was taken last summer. The bees tired themselves swarming. The weather had most to do with it. The humidity was high and the frequent rains in central Virginia made conditions in colonies uncomfortable.

My experiences this season were much like Mr. Harrison's in November. I couldn't decide on how many supers the bees needed but in spite of that I got a good crop of honey.

We failed to get honey from Korean Lespedeza when it was in full bloom. We had record breaking rains that washed the nectar out. It was so wet and cloudy, bees couldn't get to the fields. It was favorable though to a fine growth of goldenrod and aster. Many fields were yellow with goldenrod. I observed bees actively working asters late in October, some time after most other plants had been killed by frost.

After the big rains, we had pretty warm weather and the bees stored honey in the brood chamber from goldenrod and asters. This saved sugar feeding which otherwise would have been necessary.

Frank Derrenbacker, Jr.,
Virginia.

[These conditions match those in most parts of the country the past summer. Excessive swarming, heavy early rains in some places followed by excessive dryness, afterwards an unusual fall flow.—Ed.]

Acres of orchard, miles of tree aisles, oceans of bloom. Putting bees here is another problem, different altogether from the usual apiary management.

Moving to Orchards Is Hard Work

By Walter H. Hull, Virginia.

THE business of placing bees in orchards for pollination work is necessarily limited to certain localities where fruit, generally apples, is grown in large quantity. But as these areas are of considerable size and widely distributed the opportunity is open to many beekeepers.

Entirely apart from the danger of poisoning bees, commercial fruit sections are not generally the best places for honey production. The land is apt to be rough and hilly, with a good deal of waste land and frequently a soil naturally acid. Consequently you do not find many commercial beekeepers in orchard country. Most of the bees used for pollination work are moved in from outside. Anyone living within 100 miles of a commercial fruitgrowing section can enter this field—if he wants to. That he will want to is by no means a foregone conclusion.

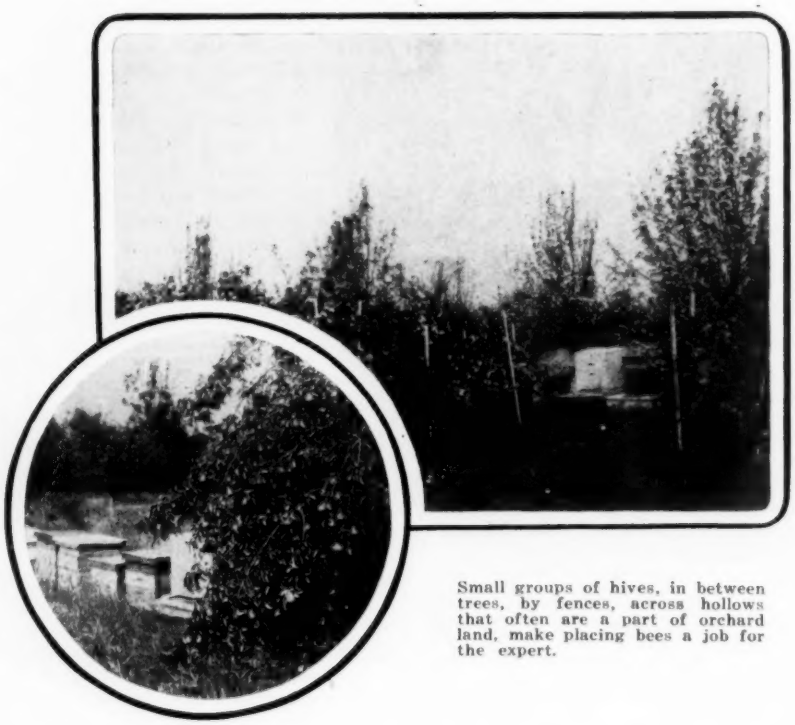
For one thing, unless you are able to work 18 to 20 hours a day and sleep, when you find time to sleep at all, more often in the cab of a truck than in bed, you will not care to engage in this branch of beekeeping.

The reason for these long hours is obvious. The whole operation—moving into the orchard and out again—must be completed in about ten days' time. Suppose you have 250 hives to be put out in this manner. (Or if you have several times that number you probably hire help at the rate of about one man for every two hundred and fifty.) Horticultural experts figure one colony per acre for best results; and of course there are plenty of orchards 250 acres or more in extent. If you could find one that would take the whole bunch of bees your problem would be much simpler. But unfortunately the orchardist has an entirely different method of figuring. He decides, first, on the amount of money he can afford for this work. Then he wrangles from the beekeeper as many hives as he can get for that amount and, finally, scatters them around wherever he thinks they will do the most good.

Instead of 250 colonies in one orchard, even though it consists of several hundred acres, the number is more likely to be from forty to seventy-five, so that your 250 may be distributed in half a dozen different orchards. If you live near the orchard district some of them will be near home. Others—for you must take business where you can find it—will be eighty or a hundred miles away. And each separate lot of these bees must be moved twice between the finish of the pink spray and the beginning of the calyx spray; about ten days, if the weather favors you. Entrances must be closed for each move, and of course this must be done when the bees are not flying, in other words, at night.

It isn't so bad in moving from yard to orchard. You can sleep until about 4 A. M. and still get out to the yard in time to close up 50 or 75 hives or whatever the required number may be.

In moying them from the orchard the case is different. As mentioned above, the orchardist puts them wherever he thinks they will do the most good. Some blocks of trees may



Small groups of hives, in between trees, by fences, across hollows that often are a part of orchard land, make placing bees a job for the expert.

have one to each acre, others one to each three or four acres. And in between will be many acres which for one good reason or another have no bees. A single load of from 50 to 75 colonies may be strung out over four or five miles of ground as execrably rough as only orchard ground can be. One almost needs a chart and compass to follow such a course at night; he will be lucky if he doesn't need a chronometer and sextant before he gets through, especially where the hives are hidden by rank growing cover crops and he has to wander around and around to locate them.

But if the ground is too rough or too wet or otherwise impassable for a truck he may be lucky after all, for in that case the hives will have to be hauled out by wagon and quite likely he can persuade the boss to give him a team and driver that night, so that he can close the entrances and pick up the hives on the same trip, to say nothing of having a man who knows the ground to pilot him over the course.

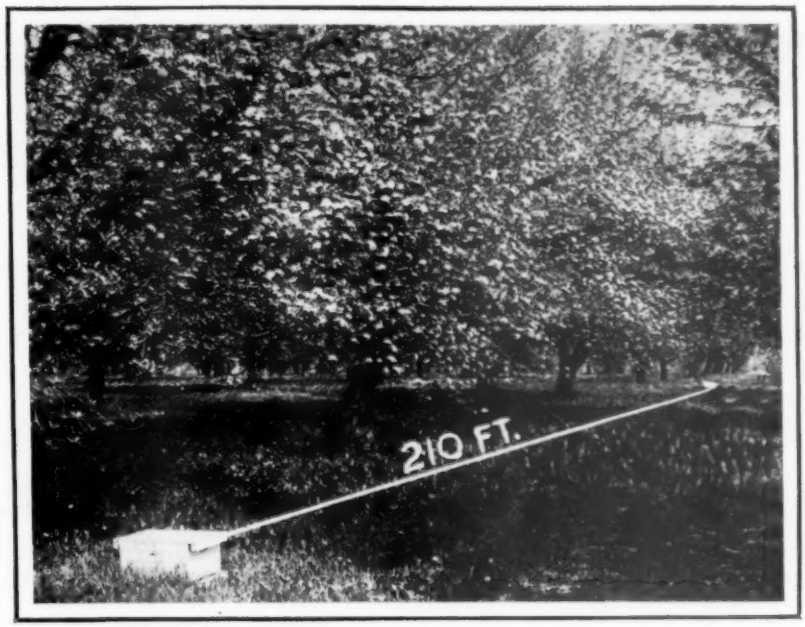
At this season of the year bees stop flying, in fair weather, at about seven o'clock. Beginning at that time to close the entrances there will not be much left of the night for sleeping when you have finished.

Of course extra help may be hired for this work. An extra man on the job will relieve the man in charge of much heavy work but, unless the helper is himself capable of taking charge, it will not shorten the hours very much. You must have a competent "beetician" (we need such a word, but I hope some one will think up a better one) in charge of the work or you are courting trouble. Personally, I have never had any serious trouble while moving bees; but on the other hand I have never moved a bunch of bees into an orchard and put out again without having something happen that might easily have proved serious.

For example, in an orchard too rough for a truck you are carrying the hives around on a wagon. Presently the driver gets into a spot too rough even for the wagon. By the time he gets out some of the hives are wrenched loose from their bottom boards. Before you know it the air is full of bees and the mules are beginning to fuss and stamp. Within another split minute they will be plunging and kicking.

You get the smoker going and drive the bees back onto the combs and nothing happens. But you don't waste any time doing it, nor stint the amount of smoke. A little less promptness in applying it, or for

Truck, after truck, loaded with bees for a large orchard. Often the trucks must give way to the farm wagon or rack to scatter out the hives where they are needed.



Two hundred ten feet, each way, from hive to hive, says the New Jersey experiment. Some do it; others group in more convenient arrangements

that matter a little less confidence in its efficacy, a moment of doubt as to how to handle the situation, and it would have been out of control. The fact that things of this nature are likely to happen at any time, and do happen sometimes, keeps you constantly on the alert and makes it out of the question to delegate the job to anyone not skilled in handling bees.

This is not written to discourage anyone from taking up the work. It is a true picture, but there are compensations, and also ways of easing the load. Serving the same orchards year after year you soon learn the ground, the scheme of distribution, and where to look for help in a pinch. Also where to hole in for a few hours' sleep.

The more colonies you can arrange to put in each orchard the less work it will be to handle a given number.

It is a little more convenient to use your own truck, but don't buy one just for this work. Most orchardists have trucks that are ideal for moving bees, and are glad to use them if they can in that way secure more bees for their money.

Two or three hours' run north or south often makes several days' difference in the blooming season. Elevation has the same effect. Take advantage of this wherever you can.

When bees are removed from the orchard it is about as easy to set them down one place as another. If the yard they were taken from does not promise well you can put them somewhere else at no extra cost.

Alabama Beekeeping News

By Thomas Atchison,
State Apiarist,
Alabama.

WE have had the coldest winter here we have had in a long time. Yet, I believe bees will be in better shape for packages, as other years they began brood rearing early in January. This year, up to the 15th of February, the bees have only a small patch of brood, most of them with plenty of honey, and when they do start, they will come mighty fast.

The last of January, as a member of the Legislative Committee of the American Honey Producer's League, I appeared in Washington with others for the Sub-Agricultural Committee, in the interest of getting appropriations for a Bee Culture Laboratory in the North Central States. Prof. Wilson, of the University of Wisconsin, and Kenneth Hawkins, of the G. B. Lewis Company, were also members and we appeared before the Committee to present our claims. The Committee seemed to be much interested, although nothing definite resulted.

I called on Mr. McGrew in Washington concerning the Bee Shipper's Marketing Agreement. The general opinion is that the agreement is in better shape than ever, as none of the decisions of the Supreme Court touched on Marketing Agreements. The general opinion among farm leaders is that the Marketing Agreement will be strengthened, as there are other interests such as peanut growers and fruit growers, trying to get the same form of agreement, so the shippers of bees and queens in the South are in a stronger position than they have ever been.

Returning from Washington, I was called to Tampa, Florida, to judge the Honey Exhibits at the Florida State Fair, the largest and finest display of honey I have ever seen. Mr. Foster, the Florida Apiary Inspector, had something to be proud of in that honey show. It was no small job to judge.

There were three of us, Mr. Cook, of the U. S. Department of Agriculture, Mr. W. A. Ruffin, Extension, Apiculturist of Auburn, Alabama, and myself.

Here is an account from the Tampa Tribune:

"Three judges hung prize ribbons in the honey show at the Florida State fair after inspecting twenty tons of honey in 20,000 jars. The eight prizes awarded, in order were as follows:

"House & Haynes, Dunedin; Harold Struthers, Lake Wales; H. E. Randall, Moore Haven; Ross J. Haynes, Dunedin; J. R. Martin, Dunedin; Moore Haven Honey Company; Florida Honey Distributors, Winter Haven; and Geo. Wardell, Moore Haven."

Our Cover Picture

Hundreds of new subscribers in farm and rural communities have entered the reading list of the American Bee Journal during the past year. Most of these people are beginners. They have other ventures besides beekeeping. Many of them are general farmers.

Our cover pictures this year will be a series of outdoor scenes some of them farm animal pictures, which we believe to be outstanding and which are furnished by that versatile agricultural photographer, J. C. Allen, Lafayette, Indiana.

This month's cover is a familiar farm subject and an unusual group; not much related to bees, perhaps, but all beekeepers are farmers at heart. Although the industry is not listed primarily as an agricultural pursuit, it is certainly such.

Some say "pigs is pigs and bees is bees," but what of it? Many a lot of good fat hogs came out of honey money from a bee yard in one corner of the farm lot.

Get Ready for the Early Flow

Although fruit is grown in large areas in many parts of America and offers the possibility of large honey yields, only a few beekeepers are able to get substantial crops from that source. The orange is about the only early blooming fruit tree whose honey is well known in the market. Even so the greater part of the honey from that source is used for building up colonies rather than for the accumulation of surplus.

Citrus groves are now present in very large acreage in California, Arizona, the lower Rio Grande Valley of Texas and a large portion of central Florida. During the seasons when a liberal nectar flow follows favorable weather for early brood rearing, the beekeeper harvests large crops.

In the average season the opening of the citrus flow finds the colonies weak in population and unable to store the major part of the available nectar. This same condition usually applies to the bees in the large apple and pear growing districts throughout the northern states.

With such rich harvests available the question arises as to whether there is anything that the beekeeper can do to secure a larger portion of the crop. No matter how strong the bees may be at the close of the season in the fall, they will be greatly reduced in numbers unless brood rearing has been in progress for several weeks before the opening of the flow.

It is not easy to secure a large working force of bees at the time of year when the bees are normally inactive. Abundant stores and protection against cold greatly help, but even with such helps the bees in the lower Rio Grande Valley of Texas are likely to remain broodless during December in the average season.

E. B. Ault of Mercedes, Texas, has built a house apiary in which the bees can be kept warm during the cool periods in an attempt to stimulate early brood rearing. He begins feeding early in December for the purpose of stimulating activity, and, with young queens which were introduced in late fall, he has been able greatly to increase the honey crop from citrus.

Thus the question arises as to whether a bee house might be made to succeed in similar manner in northern orchard regions. The great changes of temperature during the early spring offer a serious handicap to early brood rearing and make it difficult to build up rapidly. The house apiary would enable the beekeeper to avoid the chilling of brood in inclement weather and perhaps to harvest a larger quantity of honey from fruit bloom in seasons when the weather is favorable.

In citrus regions a few beekeepers have been able to increase greatly the amount of honey secured from oranges by careful management and early stimulation. It requires liberal feeding and ample protection, but the crops in many cases have been surprisingly large and have justified much extra effort.

It appears very certain that much larger returns may well be possible from the bees in orchard districts than are generally secured.

Save the Best Queens

Every beekeeper will do well to watch for colonies of outstanding performance and to rear a few young queens from the mother which heads the colony. Commercial queen breeders are essential to our industry as now managed, as few honey producers have either the time or the inclination to rear their own stock. However, when the unusually prolific colony appears the stock should be preserved. Progress in the beekeeping industry would be very rapid if all such stock could be saved for breeding purposes. Too often the most valuable queens are lost through failure of their owners to appreciate their worth.

Development of Disease

There still remains a great deal to be learned concerning the development and progress of disease within the hive. In some localities brood diseases never seem to become serious. It is probably due to some correlation between field activity and the disease cycle. E. M. Cole contends that the nurse bees use only fresh honey for food for the brood so long as it is coming from the field. If that be true it may explain why disease seldom appears in the hives during a honeyflow, at least in some places. Even though the disease might be already present within the hive, it would spread very slowly if the brood was fed only from fresh nectar coming from the field.

A careful study of the progress of disease from its first appearance until the final death of the colony probably will reveal some things as yet unnoticed.

Honey from Corn

In our February issue, Alfred Pering tells an interesting story of the honeybee gathering sap from the corn plant. Corn being a wind pollinated plant does not secrete nectar in the usual sense of the term. There are numerous reports, however, to the effect that it does at times exude sap which is freely gathered by the bees, as in the case which he describes.

There are a great many confusing reports of honey gathered from plants belonging to the grasses. A little investigation usually makes clear the fact that such honey is from some unusual condition. At times when wheat is cut green, the bees work heavily on the sap exuding from the newly cut stems.

In many cases when so-called honey is gathered from corn, sorghum or field grasses, it is honeydew given off by aphids or plant lice which the bees have found.

Who Holds the Markets?

Great changes are taking place in the market demands for food products. These changes largely are the result of advertising which is able to interest people in new or different foods. Since the capacity of the human stomach is limited, the selection of anything new must of necessity replace something else on which dependence has been placed in the past.

One of the most striking cases is that of citrus fruits which are rapidly becoming staple on the tables of all classes. Even in the apple growing regions where apples were formerly an every day dependence, oranges and grape fruit are gradually replacing them.

Citrus growers have been consistent and constant users of advertising. In addition to paid advertising which greets the reader with the appearance of each new copy of the best known magazines and newspapers, the public is supplied with an abundance of material in the way of leaflets with appetizing suggestions of innumerable ways in which to use citrus fruit. There is also constant propaganda in the way of medical suggestion of citrus for health reasons.

The success of the citrus growers is outstanding and commendable. With a worthy product properly presented public approval is the natural and logical thing to expect. Lack of similar enterprise on the part of the apple grower is losing a large part of the market which was former-

ly open to apples. Orchardists must wake up and become active if apples are to retain their proper place in public estimation.

There is something to be learned here not only by beekeepers but by growers of nearly every commonly used food product. There is nothing which cannot be replaced by some substitute. Unless the ones whose interest demands attention continue to be active, the public gradually forgets and in time finds itself satisfied with something different. We must continue to keep the merits of honey before the public if we expect our demand to continue.

Filtered Honey

It begins to look as though filtered honey has come to stay. The result of filtering is a clear and attractive product which appeals to the eye of the buyer. At first there was some anxiety on the part of beekeepers for fear something might be removed from honey to reduce the quality of the product. The elusive flavor and aroma of high quality honey are the things which give it sales appeal and as long as these are retained no harm would seem to result from the removal of wax particles and pollen grains.

Honey has lagged behind other farm products in its market preparation and has lost much of its former popularity as a result. Processing is the current method for most food products. Nobody would think of attempting to market butter on a large scale without processing the cream. Perhaps the filter will do for the beekeeper what the modern creamery has done for the dairyman. The prosperity of the dairy seems to date from the development of modern processing practice.

Cause of Queen Failure

It seems very probable that investigation will prove that most of the trouble causing supersedure of queens prematurely is caused by low temperatures. In a state of nature the bees rear new queens when the weather is very warm and at no time are they permitted to be even slightly chilled.

Commercial queen rearing as now practiced demands a large volume throughout the season and it is very difficult to avoid some chilling in cool weather. Doolittle, long recognized as a master queen breeder, frequently called attention to the importance of high temperatures for all queen rearing operations. He stipulated 85 degrees as the minimum temperature for grafting and regarded 85 to 95 as the correct degree for normal work.

Even after the queens are reared there is danger of chilling and that can very easily happen to queens in the mails when accompanied only by a dozen or so of attendants. It would seem that some experiments might well be made to determine what degree of cold a queen may stand without injury.

Doolittle required a temperature of 75 degrees or above for handling ripe queen cells when giving them to the mating colonies. If the temperature was below 75 he used a heated scale weight to warm a box which was lined with felt in which the cells were carried.

One wonders whether the constant demand for lower prices for queens has been responsible for less careful attention to all the details necessary for the rearing of first class stock in many cases. If we demand the best we must expect to pay what it costs to produce the best quality. First quality queens can only be reared when they are kept warm at every stage from the time the eggs are laid until they are finally introduced to the colony where they are to remain.

Crop Prospects

In spite of the severe cold of the winter there is reason to believe that honey plants will come through in good condition over a wide expanse of territory. In many midwestern localities there was about three feet of snow in January. Country roads have been blocked for weeks at a time by huge drifts which snugly covered all low growing plants with a protecting blanket. In fact, it is the covering of snow which lends hope that bees wintered out-of-doors will be able to survive.

For several years past the winters in the Mid-West have been dry and little reserve moisture has been stored for the summer crops. This winter the heavy snowfall has provided a soil cover and soil moisture at the same time. It is hoped that this assures an end of the drought that has prevailed for several years and the beginning of a cycle of abundant moisture.

With the markets shorter of honey than in several years and an increasing demand, it would seem to be the part of wisdom for every beekeeper to give unusual care to his bees. We confidently expect that 1936 will be a season of prosperity for the beekeeper who has plenty of bees, well cared for, in a good location.

Winter Losses

It is too soon yet to tell what losses have been sustained because of the long continued and unprecedented cold weather. We must expect, however, that many thousands of colonies of bees have perished and the beekeeper should be prepared for prompt action when moderating temperatures make it possible to ascertain the conditions.

As soon as it is known that the bees are dead, the hives should be tightly closed to prevent robbing and the possible spread of disease. Good combs are valuable and care should be used to prevent damage by mice and, when warm weather arrives, by waxmoths. Since prospects for a crop in many localities are good, it may prove to be a wise move to order package bees to fill all such hives.

Unless the beekeeper is watchful, many colonies will be lost after mild weather arrives because the hive entrances are clogged by dead bees. With the arrival of the first warm day, care should be used to clear the entrances so that the bees can fly.

It is important also to make sure that stores are sufficient in every case for such colonies as remain alive. In the Mid-West the zero temperatures continued for a period beyond previous record and it is expected that many colonies will be found dead with abundant stores just beyond the reach of the cluster. Bees withstand a surprising amount of cold when stores are sufficient, but death often comes because it is too cold to move the cluster to an adjoining comb when honey is exhausted within reach. We await with interest reports from our readers as to what has happened during the winter of 1935-36.

Our Disease Experiment

We greatly appreciate the many offers of cooperation coming from far and near. Offers of promising stock have come to us from as far distant points as Central Europe and Australia. Certainly this generous support should greatly aid in the finding of resistant stock and hasten final success if such is possible.

Naturally we feel some concern for the safety of valuable stock wintering in the apiary at Atlantic, Iowa. The bees were fed generous quantites of sugar syrup last fall and all are packed in tar paper cases in the shelter of the grove at Pellett Gardens. We are hopeful that most of the stock will survive in view of the heavy snowfall there.

Credit

In view of the general striving after credit for scientific achievement which prevails among research men, it is refreshing to read the preface of Doolittle's "Scientific Queen Rearing" and note the modest claims which he made for himself. Doolittle is generally recognized as having been the father of our present system of commercial queen rearing by means of artificial cell cups and transferred larvae. Concerning his work he said:

"All along the way I have picked up a little here and there, so that most of the credit for what is valuable in this book belong to someone else than Doolittle."

It is rare indeed that all the credit for any accomplishment is due to the one who completes the task. Doolittle may have picked up a little here and a little there but he certainly put the parts together in such a way as to provide an effective system of queen rearing.

The Problem of Package Bees

By Allen Latham,
Connecticut.

MUCH has been written the past year or two about queen failure in packages and consequent loss of the package. I feel that no one of the various writers has taken the bull directly by the horns, and that there is need of striking right at the heart of this trouble.

I have had considerable experience in shipping bees in packages and in buying bees in packages. In shipping bees I have had only a very small percentage of reported losses, but have had my share of bad luck with packages bought.

There are three principal causes for failure with package bees, and some minor ones. I shall write of the three principal ones fully and make brief mention of the minor ones.

I will write first of the style of shipping case used. There are two cases in general use, one with two sides of open wire, and one with both the sides and the ends open. Both are bad, but the one with both ends and sides open is the worse of the two. It is a peculiar thing that the vast majority of beekeepers persist in the belief that bees must have lots of air, when as a matter of fact, too much air is detrimental in shipment. If the entire trip were to be taken in a mild, moderately humid air then the bees would not suffer in these wire cages. Such is not the case.

Caged bees start from a region where it may be 85 to 90 in the shade, with the air often very dry. The hot, dry air pours through the cage and dries out the bees. They become uncomfortable, and hence restless. They wear themselves out running over the wire seeking an exit. This is why a shift was made from a candy stocked cage to a thin-syrup stocked cage. It had to be done to save the bees.

As the journey progresses the caged bees come often into a region where the temperature drops even to the frost line. Again the bees suffer. They hug together trying to keep warm on a diet of sweetened water. They become a compact ball near one end and at the top of the cage. The caged queen is quite likely to be left exposed to the cold.

Far better is the case of bees in a cage which offers shelter. My own cages are entirely of wood except two narrow slits between the outer bottom and two walls. In the inner bottom is a dome of wire cloth. My cages are dark and sheltered and the bees in them rarely become restless.

The second principal cause of failure with package bees is the lack of knowledge of what should be done on the part of the shipper. Many shippers in the South practice this method: A force goes into an apiary to put up package bees. Queens are hunted up and when found combs selected at random are shaken into the shipping cases. No regard is paid to the age of the bees taken.

The ideal package is one made up almost wholly of bees running from a week to two weeks of age. Bees much younger are weak for the trip and bees much older will not survive long enough to establish the package well at its destination.

To get bees of this age there are two ways to follow. My own method is to shake bees upon a sack upon which the cage lies open, on its side. The queen (for all my package bees go with their own mother or at least a queen which has already been introduced) is dropped with the first bees and she with bees run into the cage. When enough bees are in the cage it is closed. Most old bees fly home and very young bees are not shaken unless the combs are violently shaken.

A good method is one practiced by some of the wiser shippers with whose packages I have had nearly 100 per cent success. They use two-decker hives with an excluder shutting the queens below, drum on the hives and shake bees only from the upper stories. Thus only the younger bees and no drones go into their packages. They select if possible a day while the field bees are out. Bees thus selected travel better, are less restless and arrive with little of their vitality exhausted.

Now for the third prime cause for failure. This is in the queen. I have saved for my last the most important of the three principal causes. There are many men in the North who will not buy a queen from the South if they can help it simply because they have had so many queens from the South fail them. There is a feeling in the North that a lot of poor queens are reared in the South.

Now I have bought splendid queens from the South, and I know of good queen-breeders there whose queens are just as good as can be reared. I have had lots of poor queens from the South, and I do not practice buying again from breeders who have sold me these poor queens.

A great many of the poor queens mailed out of the South are poor because the men who reared them do not know how to rear good queens. I think there are also a number of breeders who do not care what sort of a queen they send out. As long as she has six legs and is not a worker and not a drone they will mail her.

Some of my readers may think I am exaggerating, but it is an honest fact that two different breeders have sent me queens which were so dwarfed that one had to gaze into the little cage a minute or more to determine which bee was the queen. I have had so-called queens mailed to me that were not much larger than worker bees.

Sometimes this may be an oversight on the part of the shipper. He has too much to do. He hires cheap help, often Negro. He leaves too much responsibility on this unskilled help. However, there is another very deep cause underlying queen failure which I have never seen mentioned but which is really the chief cause of numerous queen failures.

I have in the past ten years made a rather careful study of this matter and feel that I am right in my conclusions. **Queens fail frequently because the drones they mated with did not perform a good job.**

The mating of a drone with a queen is not a simple matter, like that of two rabbits. The drone organs are possibly the most complicated male organs in nature. The act cannot be carried out in a few seconds. It requires from five to ten minutes, unless all my observations are wrong. The climax is reached only when the drone can reach a frenzy of nervous excitement, and this he cannot do unless conditions are right.

I am of the strong belief that good matings cannot be carried out with the temperature much below 70 degrees, and 80 degrees is better. Queens do mate at lower temperatures but they almost always turn out drone layers in a few weeks.

Some of my readers will recall that several years ago a prominent Canadian beekeeper tried to get matings on an island in Lake Ontario. Nearly every queen proved poor, and he attributed his failure to the young age of the drones used. He was partly right, but his failure was also due to the fact that an island out on Lake Ontario would usually be too cold for queens and drones.

It is very true that drones must be old enough. This fact and the earliness of the season when most queens

shipped in packages are reared will account for a great deal of our troubles with package bees as far as queen failure goes. The vast majority of packages are called for in April and early May.

We speak of the sunny South, but it is not always sunny. They have chilly rains during March and April and there are often few warm sunny days just when they are wanted. The queens sent out in packages are young, untested queens, many of which are imperfectly mated because of scarcity of drones old enough or because of chilly weather when the matings took place.

Now I can give a remedy for all these troubles, but the remedy like other remedies cannot be free. The remedy if used will call for a higher price on the package. Use queens reared the fall before. Ship in cages with at least half the side walls solid, that is the upper half of a cage all solid so that bees will be sheltered. Send all bees out with queens already introduced. Send only bees neither very young nor very old.

To carry out such a method will be pronounced impossible because we have no simple way of carrying queens safely through the winter except in full colonies. The great difficulty would be to have enough reliable queens to meet the early demand for packages. I suggest that this might be solved by establishing queen-rearing yards in Central America or Mexico, or the very southern portions of Florida.

The average beekeeper would prefer to buy 100 packages at $3.50 each and have them all do well than to buy 100 at $2.50 each and lose one-third or more of them.

Canadian Honey Grading Law

By Hy. W. Sanders,
Manitoba.

CANADA has had, for the past two seasons, a dominion law providing for the compulsory grading of honey. This is equivalent to a federal law in the United States as it covers the country from coast to coast, although its provisions, for constitutional reasons, only apply to shipments for export, or shipments moving from one province to another. Claims have been made by the government officials in charge of this work that the effect is to establish such confidence in the quality of the honey that marketing will be facilitated, especially where the consumer is located a long way from the producer. By its opponents the law is regarded as unenforceable, and charges are made that the present low prices in Canada are the result of congestion caused by the enforcement of elaborate regulations providing for the classing and stamping of every container and carton moving in interprovincial trade.

At the recent convention of the Manitoba Beekeepers Association (January, 1936) both of these views were expressed. Several hundred beekeepers were in attendance and from the tone of the discussion, as well as from private conversations with beekeepers, the impression was gained that the law was by no means popular with the producers. It is recognized that it has been useful in establishing certain grades for honey where previously the terms used in the trade were vague and inexact. On the other hand most beekeepers dislike the obligation of having to stamp grades on their honey which are at best mere guesses, and which may give plenty of trouble if an inspector in a distant part of the country finds the honey and has a different opinion as to the mark that should be on the can.

Insofar as Manitoba honey is concerned the situation seems to be about as follows: this honey is mostly marketed in the three western provinces of Manitoba, Saskatchewan and Alberta. There is no systematic examination and grading of honey by government graders, and the vast amount of it moves from producer to consumer without any sort of supervision at all. The result is that most beekeepers stamp all their honey "No.1White" and take chances of "getting away with it." This of itself tends to undermine any confidence that consumers or brokers may have placed in the grades as established in the law. In a few cases honey obviously misbranded, sour, or in other ways violating the law, has been placed in detention or returned to the producers, but as stated above, very little attempt has been made to enforce the law. The honey is marketed over an extensive and thinly populated area, in which the Fruit Branch of the Dominion Department of Agriculture (which is charged with the responsibility of administering the Act) has officers only in the few large cities, and they have many other duties to perform.

An instrument for classing the honey, consisting of tubes of colored liquid against which the honey is to be compared, has been put on the market and a few beekeepers have bought them. A honey hydrometer, for determination of moisture is also to be put on the market. However, most beekeepers feel that in the rush of extracting time it is utterly out of the question to get sufficiently careful work done with such instruments. Of the beekeepers of the province of Manitoba only 10 out of over 3,000 have more than 300 colonies and the large majority of producers have only a small group of hives—the average is 17 colonies. Many of these are farmers whose harvest season coincides with the honey extracting time. In the rush it is difficult to see how careful work with classers and hydrometers can be done, even if the average beekeeper possessed the skill and willingness to do it.

A number of the larger beekeepers have stated that if arrangements can be made for grading their honey by competent and disinterested government men, who would grade the honey, and stamp or seal the cases, they would be glad to avail themselves of such a service and would be willing to pay the modest fee required. But such a plan is not easy to arrange. Several million pounds of honey move to market (or to warehouse, at any rate) frome August 1 to October 15, and it would be impossible for traveling graders to visit the scattered producers. On the other hand if the honey were brought to the central city of the province — Winnipeg — the beekeeper would have, after grading, to open every case and to stamp every can. At present he is compelled to stamp every can and case before he ships, and this means he must do the grading himself. The result, as stated, is that practically all the honey is stamped with the top grade, and most of it reaches the consumer without any sort of a check being made as to the accuracy of this grading.

It would seem that some more practical system would have to be devised before any appreciable amount of "consumer confidence" can be built up on the basis of grading.

Ohio Inspection

Information in an Ohio farm paper reports that more colonies of bees were inspected in Ohio last year than ever before according to C. A. Reese, state apiarist, who says that 52 counties cooperated with local appropriations. In these counties 7,829 apiaries were inspected containing 67,184 colonies with 3,745 with American foulbrood.

Ross County had the least amount of disease. Wood County had the largest number of colonies of bees, with Champaign County second and Cuyahoga County, the largest number of beekeepers. Seven of the counties were new areas of inspection.

Bodenschatz National Honey Week Display.

MRS. BODENSCHATZ

Illinois Winner—National Honey Cookery Contest

MRS. ADAM BODENSCHATZ won for Illinois the second prize in honey caramels at the National Honey Cookery contest at Detroit. This is an honor as this contest is entered by cooks from all over the United States. Mrs. Bodenschatz is active in Illinois in the work of distributing information on the uses of honey.

With this, we also show a cut of a window display in S. W. Norton's store of Lemont put out by Mr. and Mrs. Bodenschatz, National Honey Week. It included a hive of bees, novelties from beeswax, a collection of baked ham, cookies, cakes, bread, and candy prepared by Mrs. Bodenschatz using honey.

Mrs. Bodenschatz was at the store to give out samples. The announcement of the exhibit was broadcast from WLS inviting the public.

Mrs. Bodenschatz's home paper carried an account with printed recipes for Honey Devil's Food Cake, Honey Apple Sauce Cake and her prize Honey Caramel recipe which we give here:

Honey Caramels

1½ cup honey
1½ cup white sugar
½ cup powdered brown sugar
1 cup carnation milk
½ cup butter
¼ teaspoon salt
½ cup chopped nuts

Boil honey, sugar and salt together until it forms a soft ball when dropped in cold water. Add butter and milk a little at a time so it will not stop boiling. Boil to a firm ball stage about 254 degrees. Stir in nuts and pour in well buttered pan. When cold cut in squares and wrap in wax or cellophane paper. By adding 2 squares of bitter chocolate before boiling to the above recipe makes a delicious Honey Chocolate Caramel.

Honey for Children

Honey was the usual food for little children among the Jewes, wherefore Isaiah saith of Christ, Butter and honey shall he eate.—Purchas. (W. H. Hull, Virginia.)

Hawaiian Cream Pie

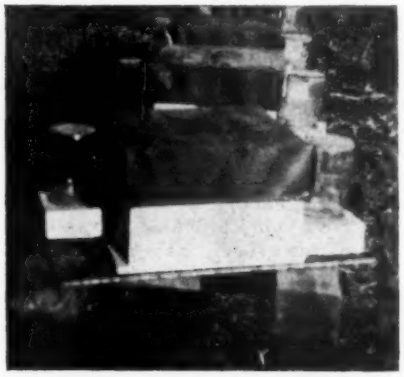
Crust:
18 graham crackers rolled fine
½ cup soft butter
1 tablespoon warmed honey

Filling:
1 cup heavy whipping cream
2 cups crushed pineapple drained
½ teaspoon grated lemon rind
2 tablespoons graham cracker crumbs
2 tablespoons warmed honey

Blend thoroughly crackers, rolled fine, with the butter and honey. Take out two tablespoons and set aside for the filling Pat the rest into a 9-inch pie dish and bake for 10 minutes in hot oven, about 400 degrees. Combine remaining ingredients for filling. Mix well and pile into the baked crust. The crust should be allowed to chill and set well before the filling is turned into it. Serve with a fluff of whipped cream, honey sweetened, if desired.

Mrs. Benj. Nielsen,
Nebraska.

Twin Mating Hive



I enclose a picture of the queen mating hive I use that beats anything for me. The picture does not give a clear idea of the hive but it is a conversion of the "Root twin mating hive." The small feeders that ordinarily hang in the hives, were always leaking. I removed them and mortised in a Boardman type of feeder in the back end of each chamber.

There is no robbing. One can tell at a glance when the feeders are empty. You do not have to open the hive to feed. The bees are not disturbed at all until after the virgin is mated and laying. The twin hives are cheap, small to store, easier to handle and plenty large for their purpose. In this climate, where we do not need to heat the syrup before the bees will take it, I am more than pleased with it after three years of use. It may not be a practical idea, but it is original and I pass it on to you for what it is worth.

Ben Burney,
Mississippi.

Honey Getting

By E. L. Sechrist,
Tahiti.

No. 1. An Introduction.

What a short title! But that word "getting" is intriguing since it suggests a process associated with the prime objective of modern apiary management, the actual obtaining of a crop of honey. Sechrist is the world's greatest beekeeping globe trotter. Not just a catch as catch can rambler but a commercial honey producer and queen breeder who has kept bees for profit under the four suns, California, Ohio, Maryland, Africa, Haiti, and Tahiti, the island beautiful, gem of the South Seas.

This first article is an introduction to a series of illustrated articles which cover fundamental beekeeping resulting from a lifelong experience. With the second one we will publish a short biography of the author, who is not only our most cosmopolitan beekeeper, but long one of Uncle Sam's beekeeping aces in the Bee Culture Office of the Department of Agriculture.

A WISE man once said, "There is no new thing under the sun;" and, "Of the making of books there is no end." But he did not say that anyone knew all about anything, or that no more ought to be written; therefore, I am writing new things about an old subject.

It is not, however, about the habits of the honeybee nor about the behavior of the bee colony. It concerns those beekeeping practices which have to do with the **getting of honey;** and it deals with well known facts regarding the habits of bees and with the principles underlying the activities of the bee colony only when reference to them is necessary to explain some point of practice.

The behavior and activity of the normal bee colony has as its aim the preservation of colony life and reproduction of the species, the storing of honey being incidental to the existence of the colony; while, on the contrary, the work of the commercial honey producer has, as its purpose, the storing of honey.

For the production of surplus honey, the colony impulse toward swarming must be kept under such control that the activities of the bees are directed towards the continuous storing of honey without swarming.

It is natural for the bee colony to build up to good strength and then cast a swarm. It is the business of the honey producer to cause his colonies to behave unnaturally, just as the dairyman does when he breeds a milking strain of cows and uses dairy practices to cause each cow to produce great quantities of milk instead of just enough for her calf.

The dairyman owes much of his success to skill in feeding his cows. Unfortunately the beekeeper cannot feed his bees a balanced ration for increasing honey production, but must, by methods of apiary management, divert the natural instincts of the bee colony to storing honey instead of swarming.

It is at once evident that control of swarming and of the swarming instinct is the foundation of success in honey getting. On successful handling of this one factor, aside from disease, location, and seasonal variations, success as a honey producer depends.

It is evident, also, to the student of bees, that the behavior of the colony in regard to swarming depends primarily upon the queen; **therefore, to control swarming, the activity of the queen must be under control.** On this one principle are founded the practices which modern beekeepers use in successful honey production.

To have control of the queen and, therefore, of the activities of the colony, the operator of a honey producing enterprise must know accurately, at all times, the condition of his colonies and the direction their activities are taking. Because the life cycle of the bee is as it is, the operator must know, at intervals of eight or ten days (whether or not he works every colony so frequently), what changes, if any, are taking place in the activities and development of each colony of bees under his care.

Examining the brood nest of the colony as frequently as every eight or ten days means a great amount of work, and the expert beekeeper, therefore, develops a plan of apiary management which will require a minimum of brood nest examinations. **A successful operator will work out, for himself, a method of management which gives adequate control of colony activity with the least possible labor.** Such an operator must have an intimate knowledge, not only of bee habits and natural colony behavior but of the effect of various beekeeping practices on colony activity.

He must also know the nectar-producing possibilities of his locations and the effects of varying seasonal conditions.

Beekeeping in the United States developed earliest, and quite extensively, in the white-clover region. Most of the literature therefore deals with methods applicable to that territory and gives little attention to practices in other and later developed regions in which the combinations of factors to which bees react are decidedly different. **It is well known that bees always react in the same way to the same conditions. The great difficulty is to determine when the conditions are the same. If the beekeeper works two apparently similar colonies in the same way and one reacts in the way he expected while the other does not, it is evident that he erred in judgment or in practice with one colony or the other.**

Investigations into beekeeping economics and apiary management indicate that all systems of management for honey production, however diverse they appear to be, have certain factors in common. It is also evident that **the labor used in producing honey is an important factor in its cost, varying from somewhat more than half the total gross cost in smaller apiaries to slightly more than one-third in the larger businesses.**

Of course, one who keeps bees for research study, or merely as a hobby, may feel justified in spending as much time as he wishes in caring for them and studying their behavior; but the apiarist who is dependent on his bees for a living must study labor costs carefully and cut them wherever possible.

The labor used by different operators during a year varies greatly, from as little as two hours to as much as eight hours per colony. It is evident that, in territories where nectar production is adequate, a beekeeper can reduce the cost of getting honey and increase his income by reducing the labor per colony and keeping more colonies.

Let us suppose a beekeeper has 300 colonies on which his labor during the year is six and two-thirds hours per colony or a total of 2,000 hours. If he finds a way to reduce the labor on each colony to two hours per year, as some have done, he can keep 1,000 colonies with the same amount of labor per year. This would make his gross income three and one-third times as great. If his 300 colonies produced honey worth $1,200, his 1,000 colonies would produce a crop worth $4,000.

These figures are given, not to show the profits in beekeeping, but to illustrate the importance of labor in the cost of getting honey. **The beekeeper who would produce honey profitably must use a system of management in which man-labor is largely replaced by bee-labor.**

* * *

Once upon a time, to my astonishment, I was told that I had made a wonderful speech on beekeeping—"best I ever listened to," and so on. I had been called on, at five minutes notice, to condense into fifteen minutes a talk I had planned to deliver in an hour and a half, and I had done my best with it. But I was thoroughly dissatisfied, myself, with that speech, because I had to make statements as positive facts without qualification or explanations as to reasons or exceptions, and while I had told what I believed to be the truth I knew that I had not told the whole truth and that my talk could be picked full of holes by anyone who wished to do so.

In these articles I have tried what is, to me, a new plan. I have given, in as few words as I can, what I believe to be the facts that I wish to get across to you, the bare statements, something like the text of a sermon; **and this will be printed in heavy black-face type which you can read quickly and thus get the gist of it in a minute or two.** Then I have followed this with what seems to me to be the necessary discussion for the student who wishes to know the why and the wherefore of statements which he has read in black-face type.

* * *

I write primarily for operators of apiary businesses and students of beekeeping who know the possibilities of their locations and who already have a good knowledge of beekeeping principles and practices. But what I give will also be of use to the beginner in beekeeping and will help him to shorten his period of experimental work by directing his attention to the importance of certain factors and practices which form the basis of all plans of apiary management for honey production.

The endeavor is made to classify systems of management, to list the principal factors involved in honey production, and to determine the beekeeping practices which will provide those basic factors, in order that each beekeeper may work out for himself a system, suited to his locations and conditions, which will produce honey and prepare it for market with the least expenditure of labor and at the lowest cost.

Some operators prefer a system of management which makes the individual colony the unit, while others prefer to consider a whole apiary the unit of management. These latter plan to obtain a moderately good per-colony yield with a minimum of labor and to use, in caring for another apiary, the labor that might otherwise be expended in securing a larger per colony yield from fewer colonies.

Because this book is not a discussion just for beginners it does not primarily go into bee behavior, but considers practices and methods which insure the adequate presence and maintenance of the basic factors for honey getting, leaving it to the reader to correlate these practices and methods with the principles of bee behavior and with his local conditions. For this purpose, however, these articles alone are not sufficient but must be studied in connection with standard textbooks on the honeybee and with the current literature of the industry. Only by such study, combined with practice, may the beginner become a bee master and a successful producer of honey.

The Hobbyist Paves the Way

This picture of E. Roland Herbert of Yarmouth, N. S., was sent to us by Mrs. Herbert. She says her husband has four colonies and is like a kid with a new top whenever he works with his bees.

It takes a lot of enthusiasm to get the good wife to send in hubby's picture and you may know she thinks he is enjoying himself and she has some enthusiasm too, I imagine.

The hobbyist paves the way to commercial beekeeping. Many commercial beekeepers start in just this fashion.

Congratulations, Mr. Herbert. Hope you keep up your interest.

The Wise Bee

A wise bee gathers sweet and wholesome nourishment from those places and flowers which a vulgar judgment deems worthless and good for nothing; . . . To the pure all things are profitable and pure, and if any place seems uncomely it is only to those that are so in themselves. —From Purchas. (W. H. Hull, Virginia.)

Vigo County Association Steps to the Microphone

By William Pogue,
Indiana.

County Agent Redenbacher bee-lines Association News to the County.

I HAVE been asked several times about the advances made by the Vigo County Beekeepers' Association in the past three years. I don't want to take any more than my share of the credit. We have five officers and a county agent who are willing to do anything that will promote the association.

One thing that I have been asked about more than any other is the publicity from the press. We always type our articles double space and deliver them in person to the editorial department of the papers. Remember, a good white sheet of paper correctly typed, will be noticed on the editor's desk sooner than less carefully prepared material. If you want publicity, you must submit a short, well-worded story in good condition.

Another point is radio publicity. Our county agent has a microphone in his office and is always willing to weave an announcement into his daily broadcast. A little article of 50 to 75 words is delivered to him a few days in advance of the broadcast date. Seasonal beekeeping topics are discussed by one or more of the officers and delivered to the county agent typed double spaced.

The picture shows our county agent, O. C. Redenbacher, seated in his office in the Post Office Building, Terre Haute, announcing over WBOW, "This is your county Agricultural Agent, O. C. Redenbacher, coming to you again with his timely agricultural topics." This announcement is heard daily direct from the County Agent's office as his introduction to ten-minute agricultural topics.

Radio was first used in extension work in Vigo County on May 17, 1932, through an agreement made between county agent Redenbacher and Radio Station WBOW of Terre Haute. The material used is called "Timely Agricultural Topics" and consisted originally of 4-H, Agricultural and Home Economic meeting announcements, spray schedules, feeding rations, new varieties, etc. The material was obtained by making a digest coming from the Publicity Departments of Purdue University, the United States Department of Agriculture and new bulletins. Occasionally a 4-H Club member or a farmer that had completed an outstanding piece of extension work was asked to talk or submit to an interview.

These twice weekly broadcasts were continued until September 1, 1935, when WBOW installed a microphone on the County Agent's desk in the new federal building, and connected it with the studio by a private wire. Broadcasts are now made daily except Sundays from 11:50 to 12:00 o'clock noon. Talks are given by the County Agent; by Ruth Roll, Home Demonstration Agent; by the office secretary; secretary of the County AAA Associations and Extension Specialists whenever they happen to be in the county during that period.

Another program was started in March, 1935, under the auspices of the County 4-H Club Junior Leaders' organization consisting of about 85 members. They present a 4-H program every other Saturday from 1:00 to 1:30 p. m. The twelve townships in the county take their turn giving these programs, which means that each township gives two programs a year.

Radio has proved itself well worth the time required to prepare the material. The results are measured by the response following each broadcast in which literature must be obtained through the county agent's office.

Also with the assistance of the county agent, we have printed a card which is complete in itself and distributed among the beekeepers to fill out for every apiary that he knows to exist. The card gives a detailed description of roads and directions. James E. Starkey, Chief Inspector of Apiaries, says that it is the best system yet devised for locating bees. We have a pilot in the neighborhood to run through the list of cards a few days before the inspector arrives and get a line-up on the number of cards and what roads the bees are on to avoid loss of time by the inspector.

If you want to match the progress of Vigo County Association, you better hustle. I don't brag because I am the president, because I know that four other officers of the association are just as hard at work as I. The president is only one cog in the wheel. He must do his share. Too many beemen will tell you what ought to be done but no one wants to get down and do it In Vigo County I am happy to say that either of the vice presidents or the secretary do the work. When I find out who did it, someone else tells me.

We have over three hundred beekeepers with less than ten colonies. At least eighty per cent of them know nothing about bees. Most of them are orchardists or gardeners who realize they must keep bees for pollination. In spite of this we have reduced disease to one-third in three years.

Last February the ladies started to organize an auxiliary. The first thing they did was to furnish some kind of honey cookery to beekeepers at regular meetings. This created interest. Recipes are being distributed by the ladies whenever they get a chance. They meet in one room and the beekeepers in another.

The Lay Beekeeper And the New Beekeeping

By Dr. Lloyd R. Watson,
New York.

This is the second of three articles by Dr. Watson outlining the need for a new bee and how to work to get it. The first in February told what this bee should be; the present article gives beekeepers their task in the accomplishment. In April the scientist will be put at work.

APPROXIMATELY 800,000 men and women in the United States depend entirely or in part upon the honeybee for subsistence. Science has done much for our cult. It has improved our management and perfected our equipment. It has given us reasons for many operations which used to be carried out not because we understood the basic causes involved but because they just worked better. But our bees have been carried up to the present juncture practically unchanged, and we have them now just as good and just as bad as they ever were.

The beekeeper's intellectual makeup is not of the sort to permit him to do indefinitely longer with the wild bee, now that the means are in hand for developing domesticated bees. Although by far the heavier portion of the task of developing better bees will settle upon the shoulders of genetical researchers in institutional laboratories, yet a definite and inescapable responsibility in the matter rests upon the **ordinary beekeeper,** the plain, substantial men and women whose laboratory is the bee yard and whose text book is their accumulated and accumulating experience. These fine folks must somehow get the vision of a better bee. The vision must grow and spread to others till it becomes a germinating, dynamic desire in all apicultural thought; able effectively to make its needs known to the financers of agricultural research.

From an idealistic point of departure it may be asserted that the lay beekeeper has a duty toward his posterity to pass on not the identical world which he received from his ancestors but an improved one. We have no right to bury ourselves snugly in our present day accommodations, methods, equipment and never cast our eyes over beyond. Goethe speaks in these words: "What you have received from your fathers you must earn for yourself before you can call it yours." We must contribute something which we did not receive. We must create something worthy to be passed on.

The huge losses which occur every season in the United States because of American foulbrood—losses not in dollars only, would that they were, but in labor and time — create a problem which has so far baffled all attempts at solution. Beekeeping history of the last generation has been punctuated at intervals by startling claims that a panacea for this scourge had been found but they all soon rose and vanished ghostlike into air.

This is an outstanding problem to be solved before apicultural peace, pride or freedom can be hoped for. Some say it cannot be solved, but they forget that we are living in a scientific age. The disgrace consists not in falling but in lying there. The laws of heredity are operative in the hive just the same as in the poultry yard or in the flower garden. The road to success will doubtless be a long one, but easy goals in life are never the challenging ones. The high-born souls who with far vision have seen higher levels can never again be content to live in the low lands. The coming into close grips with a problem so old gives a subtle companionship with time and they who live in history seem to walk the earth again. It seems as if Huber and Dzierzon and Langstroth belong here, and who knows but that they are here in the guise of men of our own time who dream of a better order and dare to try to make it come true. There is no doubt that a disease resistant bee would raise the standard of living of many people not only in our own country but in all countries where bees are husbanded in thoughtful manner.

Every intelligent lay beekeeper will watch the bee periodicals for the development of the better bee, and every lay beekeeper will be zealous to extend the boundaries of our knowledge. To this end he will cultivate to the extent of his ability his alertness to discover morphological and behavior peculiarities in his bees, and to report these when found.

Some species of animals throw sports more frequently than others. Exceedingly few variations in type have ever been reported among honeybees. No doubt if a closer scrutiny were kept many valuable sports would be discovered. It is certain that by far the greatest number of mutations affecting cultivated animals and plants are very slight changes. Their value in the improvement of stocks is lost because they entirely escape notice. These should not be allowed to die in the pupa.

There is little doubt that variations in bees have now and then occurred, which in the hands of skilled geneticists with laboratory control of mating, could have been developed into true mines of wealth to the beekeeping and agricultural profession but they appeared unexpectedly and finally disappeared unobserved.

Consider the wealth of potentialities that might be developed from mutations causing some morphological or structural modification like a vestigial sting or absence of sting, some valuable variation in the size or structure of the wing, length of tongue, size of carrying stomach, highly colored and beautiful bees, or consider a habit or behavior variation such as partial or total resistance to foulbrood, toleration of two or more queens in one hive, toleration of greater population in one hive without swarming, quietness on the combs, gentleness, reaction to smoke, not sensitive to intrusion, active in cool weather, non-robbers, larger bees, non-propolizing bees, non-burring bees, intolerance of wax moths. If all the bees in the United States, and there are more than 4½ million colonies of them, could pass under the critical eye of a skilled examiner but once every season, there is little doubt that variations which might act as a springboard—the starting point—for inestimable experiments in hybridization and selection leading to new and improved types of bees would come to light, but for the present these lie on the scientific horizon

It is true, for the present at least, that the manipulation of the instruments must be in hands of tech-

nicians, but the popular pressure for this work must come from the lay beekeeper. It is the great company of lay beekeepers and not the small guard of scientists that must produce the creative, popular demand. It is they who through wise leadership must bring our needs to the doors of our legislators and the apportioners of our state and institutional research finances.

Experimental stations never have funds and workers lying idle. The demands upon them are always greater than their ability to supply, and our universities and experiment stations will not make room for this work till they are convinced that the popular demand is strong enough to justify the cost.

A tremendous responsibility, and in the final analysis, about the whole responsibility, rests with the ordinary beekeeper. The biggest job in beekeeping today is the breeding of improved bees. The best patron of the new bee will be the great army of lovers and devotees of the old bee who know so well her inadequacies, and envisage her domesticated and refashioned posterity.

We shall not allow our imagination to pull the reins out of our hands, but we do know that if we give a mathematician the smallest arc of a circle he will complete the circle. If we send down into beekeeping research, study, scientific investment, there will some day come flowing back a new beekeeping which will make the beekeeping of our day both look and feel queer. In honeybees that now exist in various parts of the world are to be found in scattered confusion very many of the characters we need. These will not have to be developed. They exist already. They need only to be selected, regrouped and fixed. We shall lay sure hands upon these raw materials and bring them into subjugation to human needs.

Responsibility—personal and untransferable—for the setting up and pursuit of these pioneering adventures settles upon those who would have their signatures appear in the world album of apicultural benefactors.

Driving Bees from Foulbrood With Carbolic Acid

By W. E. Stepp,
Kansas.

This shows the process. No. 3 is an acid cover, used also to get bees out of supers in honey removal. Read the article and refer to this picture.

DURING a period of several years of experimental work with American foulbrood in an attempt to destroy it and save the bees, I have tried many methods including shaking, smoking and brushing. However, these sometimes proved failures because the bees drift to other stands. My latest and most successful system insures perfect safety from drifting and also from robber bees. This process can be carried on at any hour of the day right in the bee yard.

The accompanying photograph illustrates how hives should be arranged. In this formation, the bees will never drift to other stands. They come right from the American foulbrood hive and enter directly into the new hive or cluster in front of it. When all the bees have deserted the afflicted hive, remove it and burn all frames and brood after night so that it cannot be reached by the bees.

I cleaned twenty cases by this method last year and everyone passed a clean slate this year. This method does the work and saves the bees. It looks now as though we would be able to get rid of it.

I shall now outline my system and give all details as clearly as possible. This is an easy method and if the instructions are carefully followed, the results are positive.

First—After the clean hive with full sheets of foundation is ready, place the inner cover on top. A pail of sugar syrup is then placed over the bee escape hole with a super on the top to cover the pail.

Second—Get a carbolic cover similar to the one shown in the picture marked number three. Saturate this with carbolic acid and water. Use about two ounces of acid and one-fourth ounce of water.

Third—Remove the top and inner cover of the American foulbrood hive and slip in the carbolic acid cover. Handle these carefully so that the bees won't be disturbed any more than necessary. Never smoke or drum the hive. The carbolic cover prevents the bees from sucking honey and they go toward the entrance or open space.

Fourth—Place the American foulbrood hive where the picture shows number two and the clean hive on the old stand. Let it stand for a period of thirty minutes or until all the bees are out. They will go to the new hive. Sometimes they come out of the American foulbrood hive as soon as fifteen minutes after the carbolic cover has been inserted. The carbolic acid keeps them quiet and prevents them from consuming honey. Occasionally they cluster in front of the American foulbrood hive rather than going to the new one. I then brush them off.

Keep the carbolic cover on the American foulbrood hive until you have it safe out of the reach of the bees. This way I have never found it necessary to transfer them the second time nor have I ever had a return of American foulbrood.

Early Migratory Beekeeping

Records left by early writers, show Italian people practiced migration several hundred years ago. One record tells of bees loaded on boats being moved from one honeyflow to another in a different locality. The hives remained on the boats while the bees gathered the crop. Crops were estimated by plimsoll marks.—W. H. Hull.

Sidney Wattle, a native of Mr. Maclachlan's country.

The Question of Nectar

By R. G. Maclachlan,
Apicultural Editor,
Australian Bee Journal.

No. 1. Eight Factors that Influence Storage of Sugar in Plants.

The question of nectar is one to which not much thought and little research has been given. It has not attracted much attention from botanists. Although Mr. Maclachlan is a honey producer, he is a thoughtful and an observant one and has twenty year records from which to infer what he gives us, in these two installments which go deeply into an important question. He has sought the authorities too; Sir John Russell of England's great station at Rothamstead; Dr. E. C. Miller, Plant Physiologist of Kansas; and Dr. G. C. Bose, of Calcutta, that mystical investigator who almost gives the plant a soul.

Introduction

THIS subject has been in my thoughts for twenty years, but it was 1924 before I arrived at a possible working theory. Since then I have written much about it in the Australian Bee Journal.

Some recent works go deeply into the general question of the influence of soils, moisture, light and other factors on plant life and one can infer something from these results. I hope competent investigators may be induced to go directly into the matter.

The Eight Factors

In the article on honey in the fourteenth edition of the Encyclopedia Brittanica, it is said: "Dry weather with cool nights and hot days is thot usually most favorable to the secretion of nectar." This statement is true enough, so far as it goes, but what is remarkable about it is that **it contains nearly all about nectar secretion that is known to apiarists.**

The scientific world, for its part, seems to know nothing at all about nectar. Recently, I looked through the indexes of many books on botanical research, recent and otherwise, but rarely found nectar mentioned; and then little was told about it. **Plants secrete nectar of which bees make honey**—that seems to sum up present scientific knowledge. And that much was known before there was any science.

Nevertheless, the question of nectar, with all its why's and how's, is both scientifically and practically important, and in this paper an attempt will be made, not to solve its problems, but to set them out so that beemen and others may see what needs to be looked at and looked for. The final answers can only be given by people trained to investigate the most difficult problems in the physiology of plants.

The first point to notice is that while some plants yield nectar regularly and others at odd times, most do not yield it at all in noticeable quantities. And of those yielding it, a considerable number have their nectaries on or about the leaves instead of in the flowers. Even non-flowering plants, like bracken fern, have been known to secrete nectar copiously enough to attract bees by the thousands.

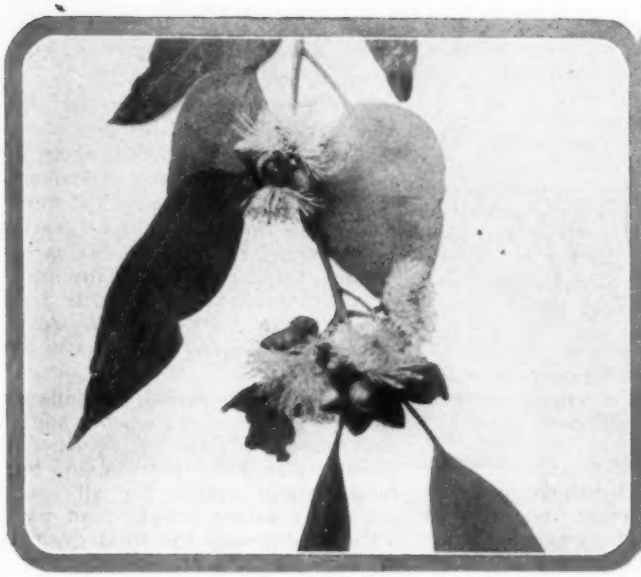
Then facts rule out all easy explanations by citing natural selection to show reason for nectar. Most plants have survived without nectar. On the other hand some trees, like certain Australian Eucalypts, some times yield it in floods, hundreds of pounds to a single blooming. But many of these trees do not yield pollen in a form in which it can be gathered by bees or other insects. And again, numbers of plants, of which Australian Acacias are good examples, yield abundant pollen without any nectar from their blossoms. Some of them have leaf nectaries, and give nectar that way. But the presence of nectar is not necessary to make insects visit all flowers. Bees crowd nectarless bloom for pollen. **Nor does the secretion of great quantities of nectar help the thorough fertilization of seeds by insect help.**

I have noticed often the contrast between years of dearth and years of plenty with Eucalypts. When nectar is abundant, there is a lack of insect life about the bloom; in very heavy flows just a bee or other insect here and there on most trees. But in times of dearth, it is different; the bloom is then alive with insect life. The explanation seems to be that when nectar is very abundant, insects have no need to visit most of the flowers; when it is scarce, all the flowers together scarcely give them enough.

So the question arises, why nectar at all? We know its presence is serviceable to some plants, by attracting insects which pollenize the bloom in a way serviceable to the species. But when so many other plants survive just as abundantly without nectar, we can hardly explain nectar production as something inherently necessary to plant life.

The significance of the question, why nectar at all, may be clear later. But just now other questions arise. One of these is the degree of resemblance between the sap of plants and their nectar. It is not easy to answer this question directly, because it does not seem that any comparative analysis of saps and nectars have been made. Saps have been analyzed, and occasionally nectars, but not from the same plants. The nearest I have been able to find to a comparative analysis is one of grape vine sap, and another of honey made by bees from grape juice. This grape juice honey ,analyzed, proved very like ordinary bloom honey in composition. So grape juice honey, allowing for its lessened water content, may be comparable to nectar.

The most obvious difference between vine sap and grape juice honey was in water content. The sap contained 1½ parts of solid matter in a thousand, the honey 78 parts in a hundred. (Most nectar would be two-thirds water.) The constituents of solid matter in sap and honey seemed similar in kind, but very different in their proportions. Of 78 parts of dry substance in the honey, more than 70 were sugars, but in 78 parts of the dry substance of sap, only 17 were sugars. In the honey, mineral salts and organic acids together were less than 2 per cent of the whole, while in the sap 78 parts of dry sub-



Blossoms and leaves of Eucalyptus.

The blackwood tree, **Acacia melanoxylon.**

stance gave 28 per cent minerals and 28 per cent organic acids.

This preponderance of sugars in the honey, as compared with sap, is in keeping with the fact that there is a drift of sugars toward the bloom for the nourishment of seeds, and also with the fact that honey from leaf nectaries is generally higher in mineral content than bloom honey. The leaves have no seeds demanding food.

Analyses of honeys in general point to the fact that there is a general resemblance between sap and nectar constituents in kind, though not in proportion. Out of twenty elements commonly found in plants, no less than fourteen or fifteen have been found in one sample of honey. And the proportion of these constituents to each other has probably much to do with seed formation needs, though we cannot be sure that that is the whole matter.

The composition of nectar seems more like the composition of the whole plant substance in the proportion of its elements than it is like sap. The sap represents plant foods in circulation, but there are others in storage and, taking the plant as a whole, the great bulk of its substance consists of carbon, hydrogen and oxygen in various combinations. Oxygen and hydrogen in right proportions make water. Carbon, hydrogen, and oxygen in right proportions make sugars, starches and celluloses. And these last form the greatest part of the "dry substance" of plants, as the sugars also do of nectar and honey.

Though most of the elements present in sap seem also present in nectar, there is one great exception: neither nectar nor honey contain nitrogen. And yet nitrogen is not only present in sap but goes abundantly to the bloom, for both pollen and seeds contain it. The significance of this absence of nitrogen in nectar will be seen later, in connection with nectar secretion and the carbohydrate-nitrogen balance in plants. Why should all the nitrogen be sifted out of the nectar, while some traces of all the other sap elements remain in it?

This correspondence between the general composition of the dry substance of plants and of nectar suggests that the fundamental cause of nectar secretion lies in the amount of carbohydrates stored in the plant. In nectar, these carbohydrates take the form of sugars, but in the plant, they may take other forms. Sugars in the plant tissues change readily to starch and cellulose, and back again as plant needs require it. In some plants, not honey yielders, the storage of sugars and starches for the plant's future needs is very marked. Turnips, potatoes and others give examples. And it is likely that the great yields of nectar by some plants are due to the stored up sugars in their tissues.

It may be thought that nectar flows come from the day to day activity of the leaves in sunlight, assimilating carbon, and so making sugars during bloom. But this is less likely. I once saw in Australia, a good yield of honey from Red Gums (**Eucalyptus Rostrata**) that were almost leafless during bloom time, and for a good while before, a plague of lerp insects having withered the foliage. And many Australian honey plants have a periodicity in their flows that indicates their dependence on stored up foods. Thus Manuka (**Leptospermum scoparium**) blooms yearly, but heavy flows come only about once in six years. Long leaf box (**Eucalyptus elaeophora**) blooms biennially, but heavy flows from it are at least six years apart. And it is noticed that when honey Eucalypts, ordinarily blooming every second year, miss a bloom, or two blooms, as they sometimes do, the resulting flow after four or six years is extraordinarily heavy.

But just what are the factors favoring or hindering sugar storage by plants? The greater part of the dry substances of nectar consists of sugars and sugars in their turn are mainly carbon, and this carbon comes nearly altogether from the carbon dioxide of the air. There is on an average only three parts of CO_2 in ten thousand of air, but it is from this seemingly small supply that all our vegetation, herbage, field crops and forests, is built up. This is done by the action of sunlight on leaf green, or chlorophyll. Plants breathing air in the sunlight absorb the carbon from CO_2 and give off the oxygen. This is the broad fact, but the effect of light depends on many things.

(1) Light needs to reach a certain intensity (not very high) before the chlorophyll becomes active. Then up to a certain point photosynthesis or carbon assimilation, increases with the intensity of light. Thus at noon it may be four times as great as soon after sunrise. But in this case the angle at which light falls on the leaf has its effect. The more direct the light, the sharper the stimulus. Beyond a certain intensity of light carbon assimilation is hindered. And total assimilation is greatest under long continued light of moderate strength—duration being more importast than intensity.

(2) Temperatures, too, have a great effect. With temperature rising from 10° Centigrade to 27° assimilation has been found to increase four times. But with a heat beyond about 30° Centigrade or 86° Fahrenheit, the rate decreases.

(3) The time of year has also its influence. Assimilation in spring is greater than at other times of the year. The age of the foliage also

matters. Young leaves and old leaves are less active than middle aged ones —the activity depending on the numbers of chlorophyll grains per unit of leaf.

(4) A further factor is the color of the light rays. Red and blue rays are most effective; red rays twice as effective as blue, but only one-fourth as effective as full sunlight. And photosynthesis in plants under noon sunlight may be five times as great as in plants under shade.

(5) Then some plants need more light than others. And some are short day plants and others long day ones. Short day plants tend to flower when the days are short, and if kept under light all the time (by means of electric light) they will grow and grow without flowering. But with long day plants the flowering time is hastened by exposure to light. Soya bean, tobacco, maice and sorghum are short day plants; wheat, grass, clovers long days ones.

(6) Carbon assimilation is also greatly influenced by soil constituents. The broad fact is known, but details are uncertain. Soil constituents may be classed (in this connection) as those tending to increase the protein or nitrogenous content of the sap, and those tending to increase its carbo-hydrate content. We may suppose the best combination is one which results in a carbohydrate dominance. Chlorophyll itself is a known that a high carbohydrate-nitrogen ratio favors fruit bearing, while a high nitrogen-carbohydrate ratio favors growth.

Nitrates and sulphur are direct protein builders but other constituents may favor carbohydrate predominance. Chlorophyll itself as a magnesium compound, and iron is necessary to its making, though not found in it. Chlorine favors sugar production in some root crops; potassium likewise. Silicon helps seed formation and calcium is important for the translocation of sugars and proteins from part to part of the plant. Sometimes in experiments a deficiency of nitrogen has been found to increase the fruit crop.

It thus seems theoretically likely that a certain sod composition may favor the general growth of a plant and establish in it a preponderance of proteins over sugars, while another composition may favor fruit and seed formation by establishing a preponderance of sugars. Such a preponderance in honey plants should favor nectar secretion.

(7) Some elements are known directly to stimulate carbon assimilation, when present in minute quantities. They act as catalyzers, speeding up the plant activities. Iron seems to be one of these, iodine another. One part in a billion added to the water in which a water plant is growing doubles the rate of carbon assimilation. Formaldehyde acts in the same way. But while a mere trace of such substance may be highly stimulative, larger quantities may be without effect, or positively harmful, thus one part in a thousand of formaldehyde decreases carbon assimilation to one tenth, while iodine, in normal quantities, is not found to have any effect on plants.

(8) The free absorption of plant foods from soils and air depends on two things—a supply of air about the roots, and the presence of sufficient water. Air is necessary to supply oxygen to the roots and to prevent poisoning by the presence of carbon dioxide, for this while it is the life of plants through their leaves, is death through their roots. One per cent of it in soil atmosphere does harm and much of it kills.

As to water, carbon assimilation can only go on in its presence and all absorption of food constituents is closely related to water supply. Sufficient water makes for all round growth; a larger supply than usual while it increases the total quantity of nitrogen in field drops lessens it in proportion to mineral contents and probably to carbohydrates. **Is is probable that plenty of rain at the right time makes for that preponderance of sugars in plants which seems to be the basis of honeyflows.**

From Our "49th" State

RUMOR has it that possibly Hawaii may in time become the 49th state. Hawaii is very interesting to Americans now that they are beginning to understand that the Islands are really a part of the United States. George Marvin, formerly with the Office of Bee Culture, with whom many beekeepers are acquainted, left after the Valdosta meeting for Honolulu to work with Heber Coffey who is in charge of the Sandwich Islands Honey Company, probably one of the largest honey producing organizations.

He writes about the Island after a short acquaintance: "Over here in February on first spring inspection, I was disappointed at the smallness of the colonies. By April 10th, the Algaroba or Giawe began blooming. The bees built up to strength on the flow and are now storing plenty of honey (June 30). Regardless of how crowded they get, they do not seem to swarm. I have only seen one swarm so far.

"Queens are superseded quite often, so a young one is in the hive most of the time. After the colonies get up to full strength, the honey pours in. No telling how much honey would be stored with colonies up to full strength at the beginning of the flow.

"Honey from Algaroba is white in color; granulates readily. At one yard, the honey came in slowly and when we came to extract, all the honey stored in old combs had granulated but where foundation had been drawn out, the honey was liquid. Although we are not on the hot, dry side of the Island, where the sugar cane is irrigated, the honey is not heavy in body like the honey produced in the irrigated sections on the mainland. In fact I believe it is light.

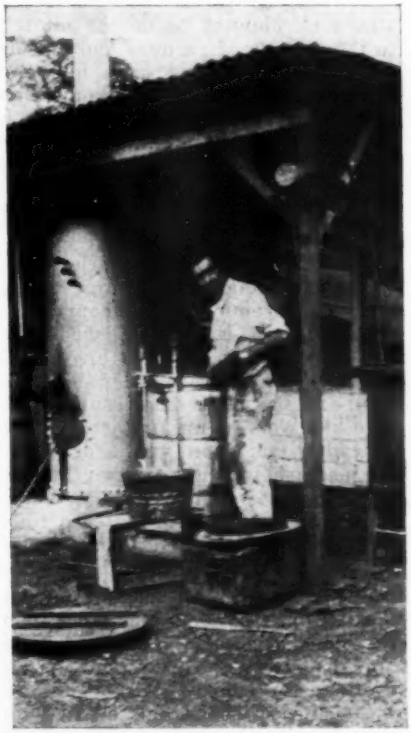
"We have sixteen yards three or more miles apart. It keeps us humping to keep them all visited.

"We have been using carbolic screens in removing honey. They work wonderfully. We use five screens taking honey and it keeps two of us busy taking the honey from the hives to the truck and we soon

At home under the algarobas. Queen mating nucs to right. The screened porch is a blessing. always cool. The cook, Mrs. Guthridge, watering her palms.

In the shade of the algaroba trees, at the Lighthouse Yard. Colonies stand on empty supers, away from ants and to prevent Buffalo toads from eating the bees.

have it loaded. We take in the honey to be extracted and go out for another load. This has been going on now for a month from 6 a. m. to 5 p. m. with one hour off at noon."



Heber Coffey, manager, snapped at the wax press. Steam boiler in right background.

Highlights of the Manitoba Convention

One hundred sixty-three attended the banquet.

At this banquet Mr. J. H. Evans, Deputy Minister of Agriculture, jokingly stated that next year any one refusing to pay the nickle a hive registration fee would not be taken to court but would go direct to a six months' term in jail.

John J. Maendel who went South and brought back a truck load of bees stated that the 20 cents allowed on the cages he took South with him more than paid for the gas and oil on the trip.

Mack McDougall who also brought in a truck load stated that trucking without feeder cans lowered the weight so that it did not exceed the 3,000 pound weight allowed for trucks on the highways—a very important item in the early spring. He brought back 640 packages.

Mr. F. R. Armstrong of the Federal Government stated in connection with the new grading regulations that around 400 Manitoba producers had paid the registration fee in 1935 while only about forty of that number really needed so to do under the Act. They had registered on the suggestion of the Brokers, while the Act only required those who personally shipped out of the province to register and secure a license.

Mr. George Batho, the registrar, and L. T. Floyd, Provincial Apiarist, received hearty endorsation of the new plan of provincial registration. This requires every beekeeper to pay a nickel a hive each year—the revenue derived therefrom to be used to pay cost of inspection for disease.

L. T. Floyd reported that only two out of 3315 refused to register. One of these had twelve hives and was taken to court for his refusal. The magistrate fined him five dollars or seven days. He went to jail for the term. He was then issued his certificate with the following inscribed thereon. **"Satisfied by Imprisonment."** The second paid his registration fees and court fees in addition to the amount of $4.75 because he did not register 14 colonies. Thus ended the first year of paid registration. $4,100 was the revenue derived therefrom.

Mr. W. A. Chrysler, a visitor from Ontario, foretold that with the high speed now being given trucks the time was not far distant when the man in the North would cage up his bees and take them South and return with them in the spring just like the birds.

Mr. Gillis Graham, a visitor from Cameron, Texas, stated that 40 degrees below zero "was a little airy."

Mr. Wm. Dyck exhibited a machine imported from Germany that resembled a large meat chopper and also worked on the same principle, that he claimed would extract the last drop of wax from the cocoons of old combs.

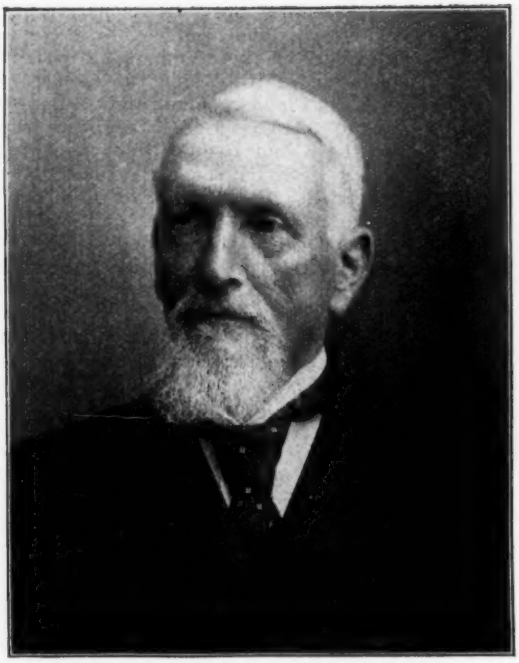
J. J. Maendel demonstrated a steam uncapping plane and had a crowd around the exhibit at all times between sessions.

Miss M. C. Hiltz in her talk on "Honey and Its Uses" convinced the audience that more honey should be used in the daily diet of beekeepers and their families and made valuable suggestions along this line.

The total attendance at the principal sessions ran between 250 and 300.

L. T. Floyd,
Secretary-Treasurer,
Manitoba Beekeepers' Assoc.

Honeyhouse of the Sandwich Islands Honey Co. (Hawaii). A heavy screen wire is used so the breezes blow through, otherwise it would be unbearably hot. Roof of chicken wire and tar paper. Power extractor, 4 one hundred gallon tanks and pump.



Lives of Famous Beekeepers

By Kent L. Pellett,
Iowa.

EDOUARD BERTRAND, 1832-1917.

During the twenty-five years in which M. Bertrand published the Revue Internationale d' Apiculture he practically revolutionized beekeeping in Switzerland and France. Old-fashioned skeps almost entirely disappeared and rational methods were adopted.—T. W. Cowan in British Bee Journal.

WHEN Charles Dadant during the 1870's wrote his little book, "Petit Cours D'Apiculture Pratique," he could not find a publisher in France.

Ever since he had taken up beekeeping following his removal from France to Illinois he had been urging the French beekeepers to try movable frames and the American methods. But he had his difficulties. Professor Hamet, editor of l'Apiculteur, only bee magazine in France, was a believer in skep beekeeping and would tolerate no other. He had refused Dadant's articles when he found the latter was persistent in his espousal of movable frames. He called Dadant a braggart and a "Barnum."

Dadant then had written for those minor farm journals which would accept his articles, and one of them made him beekeeping editor. But they had no great circulation or influence.

So when he wrote his "Petit Cours" no publisher wanted it. What chance had a book on a subject so little renowned as American beekeeping? Professor Hamet would refuse to advertise it in l'Apiculteur and it would have no sale among the members of the Central Society of Apiculture, the leading beekeeping association in France of which he was secretary. But Dadant's sister, a widow who ran a printing office in Chaumont, agreed to publish the little volume at her own risk, and she issued a small edition in 1874.

The book was devoted to Dadant's method of beekeeping with large hives, and to bee behavior, interpreted in the light of parthenogenesis, not yet accepted entirely by Europeans. The Madame veuve Miot-Dadant was unable to advertise the book. She sold but a few copies, and these largely among the readers of La Culture, the little farm magazine for which Dadant was then writing. Dadant did not receive a sou in pay for his work.

But in spite of its failure the book had a far greater influence than he could have dreamed. It fell into the hands of Edouard Bertrand, a retired broker who had begun beekeeping at Lac Leman in Switzerland a few years before, and who was groping for the best hive and system. The book led him to try the Dadant hive. And Bertrand was the man who became responsible for making the Dadant hive the standard in France, in French-speaking Switzerland, as well as in Belgium and parts of Italy.

Edouard Bertrand was born in Geneva, Switzerland, May 10, 1832. At the age of twenty, like many another young Swiss, he went to London and sought his fortune, taking a position with the banking house of the Messrs. Hambro. Three years later he accepted a position with a stockbroker in Paris, where he stayed for eighteen years.

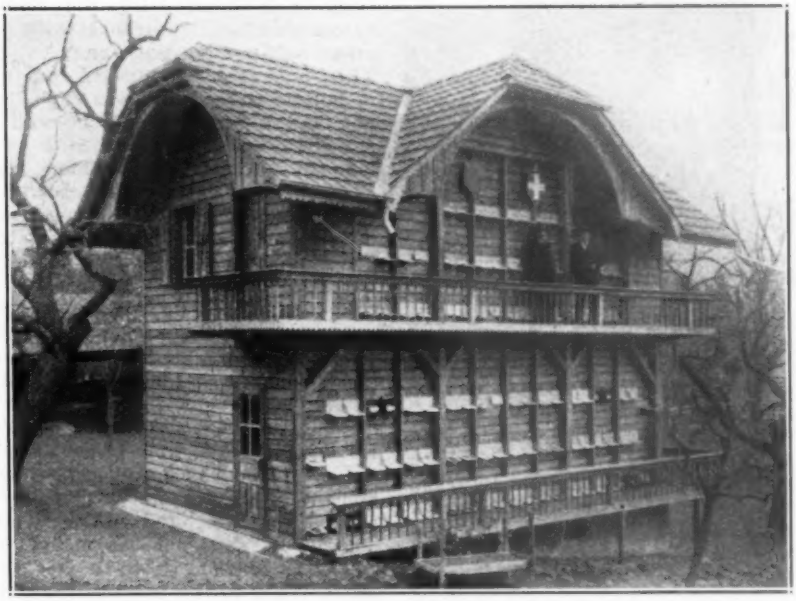
He was successful. Responsibilities were heaped upon him, but with large funds in his care, he passed through the anxieties of the siege of Paris during the Franco-Prussian war of 1870, and the overthrow of the Napoleons by the French themselves which followed immediately after. The strain told on his health. After the ordeal was over he decided to retire. He was married, but had no children. He and Madame Bertrand were able to live in comfort without the struggle of a business existence.

Bertrand purchased a property at Nyon on the shores of Lac Leman, near his birthplace in Switzerland, where he planned to devote himself to the culture of gardens and flowers and trees. A friend gave him two skeps of bees. He did not know anything about practical beekeeping, his knowledge of bees being confined to study of Huber's works—and Huber did not tell much about the production of honey. The first three years Bertrand did not harvest a pound.

He tried a large variety of hives, including hives with supers, such as Varemby, Ribeaucourt, Carey and Christ. He accomplished little with them. Then he tried hives with small frames like the Berlepsch, Bauverd, and the Jarie. The results these gave him were as unsatisfactory. The honeyflow at Nyon was short. The bee pasture was cut in two by the lake, and it was necessary to have the colonies very strong at the time the honeyflow opened. This could not be done with the small hives.

Then Bertrand ran across Dadant's "Petit Cours," and at the same time the book by G. de Layens, "Elevage des Abeilles." The next year, 1877, he started an apiary in a small family estate in the mountains at Gryon, and placed a Layens hive there. It gave him his first good crop of honey. The following year he changed his hives in that apiary, in part to the Dadant hive, in part the Layens. That same year he established a third apiary, at Bex.

His fourth apiary was started at Allevays in the Jura mountains. There in 1880 he began the fateful experiment that determined the success of American beekeeping in Europe. He built an equal number of the French Layens hives and the American Dadant hives, and tried them out side by side. The Dadant hives showed greater production, and



A house apiary in Switzerland, where house apiaries are the finest. Apiaries, in the usual yard style are about as they are among us.

Bertrand discarded his Layens hives, both in the Allevays apiary and in his home yards. He proclaimed the Dadant hive the most profitable and suitable for beekeeping. Had the Dadant hive shown poorer results, the whole practice of beekeeping in that part of Europe might have been different, for with all Dadant's courage and persistence, his teachings, and along with them the teachings of Langstroth, might never have penetrated very far into Europe without the help of Bertrand.

Bertrand taught beekeeping free of charge to those who wished to learn, and he placed a pupil as an assistant in this apiary. They secured good honey crops in spite of foulbrood, which was stamped out by Bertrand's efforts. The apiary soon paid its original investment of 2,500 francs, and returned every year a good profit to be divided between Bertrand and his assistant.

Sixteen beekeepers met at Lausanne one April day in 1876 to grieve over the bad condition of beekeeping in French-speaking Europe. And well might they grieve. Professor Hamet, who was satisfied with skep beekeeping, and who fought progress with all the bile of an ill nature, had a strangle hold on the French Central Society of Beekeeping, and through it on beekeeping in all France. There seemed little chance of making headway with any better system.

The group established the Societe Romande d'Apiculture, passed resolutions and elected officers. Beekeepers and others have a way of doing that when they think conditions are bad, then of going home and leaving conditions just as they were. But this group had the luck to elect Edouard Bertrand its secretary. And Bertrand used the society and the magazine he soon established to down Hamet and his backward allies, powerfully entrenched as they were, entirely reforming French beekeeping in the next thirty years.

Bertrand worked indefatigably for the new society, and it grew. He acted as its president at times, at others as its treasurer or librarian. The society needed a magazine, but its finances were not sufficient. So Bertrand started a magazine himself and bore all the expense. The Bulletin d'Apiculture de la Suisse Romande appeared first in 1879. Its price was to be four francs, three for members of the society. Bertrand immediately allied with himself the progressive writers. He wrote Charles Dadant in America, asking him to contribute. The appearance of the Bulletin had warmed Dadant's heart, and a letter from him offering to contribute crossed Bertrand's letter on the ocean.

Dadant became a regular contributor. The journal held the two men together in warm friendship for over a score of years, while they guided the Bulletin without ever meeting face to face. Even after Dadant had grown so old that his name seldom appeared in other journals, he still wrote regularly for Bertrand's magazine.

Bertrand was well acquainted with several languages, and there appeared in his pages the gist of the progress made in America, in England, in Italy and other countries. The Bulletin from the first promised to be a power in Europe, and Professor Hamet looked upon it with acute distrust. He attacked it from l'Apiculteur, and used his efforts to destroy it, as he had smothered several earlier publications. And in Italy, Giotto Ulivi conducted a journal and believed with other Italian leaders that the German system and hives were the best. He began to abuse Bertrand and his new paper. Even some members of his own society opposed him, for he preached that they should adopt a standard hive, the Dadant, since many hives would lead only to confusion. This upset their pet ideas.

But in spite of opposition the Revue gained subscribers rapidly. People knew Bertrand was a practical beekeeper; that he made money with his bees. And it was becoming apparent that Hamet and others had not this advantage in their toplofty positions. The list of subscribers grew. In two years the magazine paid expenses, and was finding favor all over French-speaking Europe. At Charles Dadant's suggestion its name was changed to Internationale Revue d'Apiculture. Madame Bertrand, who was as great an enthusiast for beekeeping as her husband, worked with him; and M. Crepieux-Jamin also helped in the work of publication. In 1892 there were listed 200 contributors to the Revue.

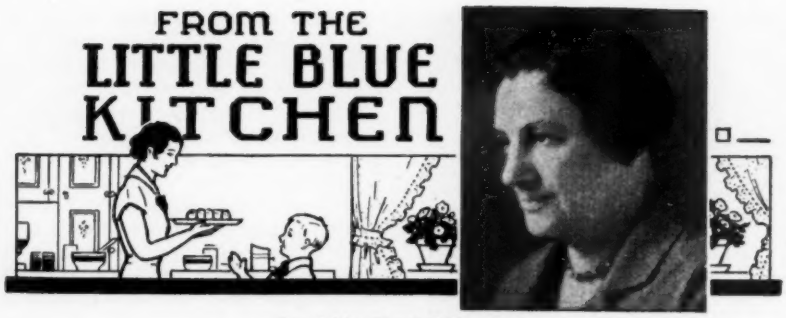
Bertrand attracted eminent scientists and beekeepers from all over the world to his hospitable home at Nyon, where they discussed the most important questions of apiculture. There was Layens of France, Editor Cowan of England, Zobareff, the eminent apiarist of Russia, and C. P. Dadant of America. One of his admirers said: "Our chief, like a diligent bee, extracted drop by drop the quintessence of these deliberations, imparting it to his readers in the Revue. After twenty years his articles are read with as much profit as when first written."

Bertrand wrote little tracts on beekeeping, which he gave people who flocked to him by the hundreds for information. He combined these tracts into his book, "Conduite du Rucher," which was translated into seven languages and ran into its eleventh edition by 1915. He also translated several books of other authors into French.

Charles Dadant planned to write a book, probably in French, and Bertrand encouraged him in this. When Dadant gave up the idea of his own book to revise Langstroth's "Hive and the Honeybee," Bertrand encouraged him to translate this into French. As soon as the Langstroth-Dadant book was on the market, Dadant began at once its translation, under Bertrand's supervision. Bertrand arranged the publication, and the book sold well in the French-speaking countries.

At last the opposition of the skep leaders weakened and their prestige crumbled. Professor Hamet saw l'Apiculteur dwindle in its subscribers, and in his old age realized he was fighting for a losing cause.

(Please turn to page 137)



By Lida Keck-Wiggins.

WELL, well, here we are again on the threshold of Spring! Winter is putting on her cape and cap, and pulling on her arctics and preparing to sail off on a high wind to her summer home in the frozen north. Meanwhile we "wimmin folks" must use all our resourcefulness to see to it that the foods we serve tune in and tone in with jaded palates and tired tummies, and yet provide nutriment too! Some job, yes? But a real cook can tackle it without fear of bad results.

We who plan constant new uses for honey can also "ring the changes" in that direction, for always there is something new to be concocted out of the honey pots.

So let's go into the kitchen and start in. First of all, if there is a club to be entertained, a party to be given, a church supper to be served, let's brighten things up a bit with a touch or two of green in honor of good Saint Patrick. . . . And how, you ask, will honey come in there? That's what Honey Lady asked herself a day or two ago, and then getting busy she had a few ideas, which she gladly shares with all Blue Kitchen readers.

If there is to be a little gathering where refreshments are to be served, why not have cup cakes, topped with honey-icing (recipe for which includes 2 cups of powdered sugar, 1 tablespoon honey, 1 tablespoon cream, 1 tablespoon melted butter, 1 egg, 1 teaspoon vanilla) tinted green with vegetable coloring, to be had at the better grocery stores, and with this a tall glass of lemonade, sweetened with honey, and topped with a green maraschino cherry? If something a little more elaborate is desired green mints will provide it. Of course the 5 and 10's will have attractive Saint Patrick's Day napkins!

— : —

If there is a supper party where salad is the piece de resistance here is an idea that will provide a delicious one and give the housewife a chance to use up a bit of comb honey or even some that is well granulated.

Open a can of white cherries. Remove stones. Then mold daintily small pellets of comb or granulated honey and fill the cherry cavities. Place a mound of the cherries on a bed of crisp lettuce, and top with honey mayonnaise or fluffs of whipped cream, over which drizzle mild flavored honey. This salad is very acceptable as something not too rich, yet very delicious, on a March menu. The green of the lettuce will make it eligible to a green and white color scheme, also. Just a sprinkle of green sugar could top each portion, if the hostess wants to have every detail perfect.

— : —

No doubt all our farmer wife readers have a few hams in the "smoke house" or other storage place. While Honey Lady has, several times, given ham and honey recipes, she now has another to offer. Ham fixed this way would incidentally make a nice Sunday dinner dish these earliest of spring days.

Soak a thick slice of ham in sweet milk over night. Drain.

Make a paste of bread crumbs, mustard and one beaten egg and honey. Spread this on both sides of a slice of ham. Place in a pan, and almost cover the meat with sweet milk.

Bake in hot oven. This should not require more than 20 to 25 minutes baking time.

Garnish with lettuce.

— : —

Honey Lady, as you may have observed, is "keen" about honey and apple combinations. This is because the two foods go well together so far as making something tasty, but also because of the dual health values one achieves when combining the fruit of the orchard and of the hive. Hence it is with pleasure she hands on this recipe for Apple-Honey Escallop.

3 cups tart apples (chop fine or slice thin)
2 cups crushed bread crumbs
3 tablespoons butter
3 (or more) tablespoons honey
⅛ teaspoon nutmeg
¼ teaspoon cinnamon
¼ teaspoon salt
½ cup boiling water

Directions

Melt the butter and stir into the crumbs. Place ½ this mixture in the bottom of a buttered baking dish; then add ½ of the apples, which have been well blent with the honey, spices and salt. Continue with the other half-portion until pan is filled. Then pour over all this the half cup of boiling water. (If your apples are not VERY tart it would be well to add to them the grated rind of a lemon.) Cover your baking dish, bake until apples are soft, remove lid. Allow to remain in oven until you have a delicately browned crusty top. Then remove. Serve with thick or whipped cream.

— : —

If you prefer a pudding sauce for the scalloped apple-honey dish, one can be made by adding extra water to the recipe given once before in these columns for honey sauce for ice cream, i.e. 2 tablespoons of butter, 2 teaspoons cornstarch, ½ cup honey. To the cornstarch and butter cooked together, and not browned, add honey, and cook all until it becomes hard when dropped into cold water. Then to this sauce add a small quantity of water to thin it which will make it suitable for use on such a dessert as just described.

— : —

To Freshen Stale Cake

A dessert which makes a nice change can be concocted by creaming together 1/3 cup sugar, 1 pinch of salt, 1 tablespoon butter, 1 egg yolk, and then adding honey-sweetened whipped cream and 2 cups thinly sliced canned peaches. This blend is to be poured over slices of stale cake. It goes particularly well with angel food or sponge cake, but peps up any good cake that is just a bit old for plain consumption! Canned apricots could be substituted for the peaches if more convenient.

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Bee Line

If you "haven't a thing" out of which to make a Saint Patrick's Day salad except a head of cabbage and a green pepper, make cole slaw as usual, then cut out shamrock shapes from the pepper and press one on top of each portion of the cabbage. If you have lettuce, make that the basis for each serving. Honey Lady has long ago given you her recipe for making cole slaw dressing with a bit of honey sweetening. However, if any one doesn't have a file of the American Bee Journal, and wants to know about this, she will be glad to answer inquiries either through the department or by personal letter.

— : —

A bee line to understanding the doctrine of the Trinity was taken by Saint Patrick when teaching religion to early Britons. Here's the way in a bit of rhyme:

Shamrocks
Grow green leaves three
Upon a single stem;
Saint Patrick taught the Trinity
Through them!

—L. K. W.

Virgins Supersede The Old Queens

I have read much regarding the safe introduction of queens. For three years I have practiced in my small apiary a method of introduction which I have never seen mentioned in the bee journals.

When the clover flow is on, I usually have at least one colony swarm from which I wish to raise queens (generally a hive supered for comb honey). Since I clip my queens, the swarm returns to the hive. When I arrive home from work in the afternoon, I go through the hive, cut out all the queen cells and if I do not wish to requeen the colony, put the old queen back as I usually find her with a cluster of bees under the alighting board.

In the queen cells which I cut out, there are usually several mature virgins which have been held to their cells when the swarm found they had no queen and returned to the hive. I look these virgin queens over and pick out the best looking ones for requeening.

My system is merely to place the virgin in the entrance of the hive to be requeened. She walks in, hunts up the old queen and, because she is more supple and wiry and not full of eggs, she kills the old queen, mates, and goes to work as the new hive mother. No bother of lifting heavy supers, no hunting for the old queen to kill.

It sounds too good to be true but in trials for three years, it has been successful every time. The virgin always kills the old queen and the vitality of the virgin has never been impaired.

I do not know whether it would work in all locations or not. However, I do know that the progeny of these large, robust queens, reared under the swarming impulse, put up a marvelous crop of honey for me the past summer.

Cassius Guyett,
New York.

Blue Blossom Clover

I have been interested in the reports of the blue blossom sweet clover seed which you distributed last spring. These reports are in line with my own experience.

The blue blossom is a wonderful seed producer but even under excellent circumstances, it is pretty short to compete with other sweet clovers in normal conditions. As a honey producer, the bees worked on it when the first blossoms appeared. I think the bees must have been sitting on the fence waiting. I will experiment further with it.

Dan S. Kitson,
Manitoba.

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THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

Long Idea Hive

Question.—I have tried several sizes of hives. I find the ordinary English hive to be too small. Finally, I used the 12-frame Modified Dadant which is splendid but I find Caucasian queens even outlay the 12 Dadant frames. My idea is now to have a 24-frame Modified Dadant brood chamber with two supers on top to cover. What do you think of it? ENGLAND.

Answer.—We have used a hive like this but we did not like it. There is too much honey stored at the sides. You get more honey when the bees store upward in the usual way which seems to be more in accord with their instinctive habits. Also I am of the opinion that the use of the 24-frame Modified Dadant will not entirely stop swarming. When the queens begin to fail, there is a tendency to crowd the brood nest anyway. The bees start cells for supersedure and swarming results when they are ripe. This seems to occur regardless of equipment or arrangement intended to prevent it. A young queen is essential in any method of swarm control.

Storage for Package Bees

Question.—In the concluding paragraph of A. P. Sturtevant's article on American foulbrood in Package Bees in July, 1933, he mentions holding the package bees in a cool, dark place for 72 hours. Does he mean they should be held there in addition to the time elapsing between the making of the package and its arrival? MINNESOTA.

Answer.—Mr. Sturtevant's work was based on the possible danger of transmitting American foulbrood in package bees. Yes, he means that they are to be held in a cool, dark place for 72 hours, three days. During this time, they may have to be fed as often as they seem inclined to drop to the bottom of the cages from starvation.

However, with the present regulations for the control of disease in the southern states, it is not necessary to practice this confinement. Combless packages under the strict regulations for shipping, should not be taken from diseased colonies.

Feeding of Larva

Question.—How long is a bee larva fed? MINNESOTA.

Answer.—We quote from Phillips' "Beekeeping" published by the MacMillan Company:

"The great growth of the larvae is made possible by extensive feeding by nurse bees. Lineburg finds the number of visits made to each developing bee from the time the egg is laid until the larva is fully grown averages about 1,500 a day. For the first two days of larval feeding, food is given in quantities whereas after that, it is given frequently. The total number of visits made to a developing larva is about 10,000. At the close of the second day of larval feeding, the character of the food changes to include undigested pollen and honey, a change which was supposed by earlier writers not to occur until the fourth day. During the last day of feeding, there is on the average a nurse bee feeding each larva almost 20 per cent of the time. During this period of rapid growth, the bee larva molts its skin at intervals of about 24 hours, each molt being indicated by changes in size in various structures."

So the larva is fed 4½ to 5 days from the time of hatching until larval maturity.

Division Board in Modified Hive

Question.—Should a division board be used in the Modified Dadant hive? How and when. ILLINOIS.

Answer.—No. A comb of honey or brood or an empty comb is as good as a division board any time with the possible exception of packing a weak colony for winter when a division board at either side of the space actually occupied and the remaining combs removed is a good practice. The space between division board and the hive body may be filled with packing material.

Carbolic Acid

Question.—Could carbolic acid be used with a hot water tank on top of the acid cloth to assist in vaporizing on cold days? NEVADA.

Answer.—A shallow metal tank filled with hot water on top of the acid cloth will increase vaporization. It will help during cool weather. However, even this help ceases to be effective when the bees become stiff with the cold and cannot move.

Stimulative Spring Feeding

Question.—My method is to feed gently from February on to the end of April which usually will get a monster colony. What is your opinion of stimulative feeding? ENGLAND.

Answer.—Stimulative feeding in the spring is useful. We use it also. I even prefer it to a surplus of honey. We like a brood nest in May almost without honey. A clear brood nest in other words, then use stimulative feed.

From May 25 until June 15 here when colonies are in their period of fastest growth with the greatest amount of brood, is when we prefer to stimulate.

Basis of Apiary Rent

Question.—What do you think is a fair price to pay for apiary rental? IOWA.

Answer.—Where beekeeping is well established, the basis of rent is already determined by custom. Some places it is high and others low. There is no set rule.

One common arrangement is to pay a minimum with an added amount per colony above those sufficient to cover a base rent. For instance, a common plan is to pay $10 a year in either money or honey for an apiary of 100 colonies or less. If more than 100 colonies are in the yard, each additional colony shall be paid for at 10 cents per colony.

Average rentals run from $10 to $25. Some rents are higher and then usually the owner of the land on which the bees are kept is expected to perform some service for the rent.

Famous Beekeepers

(Continued from page 133)

Everywhere he found beekeepers deciding in favor of the movable frame hives. At a meeting at Chartres he closed his speech with a few thoughtful words, saying that as they seemed to give the best result, all should adopt the movable frame hive. The editor of l'Apiculteur thus humbly acknowledged his defeat. Hamet died in 1889 and the succeeding editor of the magazine was not unfriendly to the new system.

Bertrand worked assiduously to further the sale of the Langstroth and Dadant book. European beekeepers were reporting unexpected returns with the Dadant hives. From humble homes in Switzerland they wrote, telling how well their colonies wintered, and what large crops the bees gathered in their roomy hives. Even in Italy, where the editors favored the German system, the beekeepers were beginning to adopt the American hives.

Dadant wrote to Bertrand of his pleasure at the success of his hive abroad. "I am indeed glad to see that, even in Europe, the large hives succeed better than the small," he wrote. "I was not then mistaken in adopting them and extolling them in France. I have never doubted it, yet I am glad to see them approved."

The two men kept in close touch until Dadant's death in 1902. They wrote on every subject near their hearts, from their home life to politics and socialism. Dadant was an ardent socialist and believed world revolution would establish a better order of society for men. But Bertrand was more conservative. He believed in new ideas, but thought they should be adopted slowly.

Two years after Dadant's death Bertrand discontinued the Revue. He was growing old, was subject to a chronic attack of influenza. Rather than see the Revue drop from the high standard of excellence which he had maintained, he discontinued it.

Bertrand was able to write in the last issue: "If I take a retrospective glance of the work of the Revue during its twenty-five years of existence, I notice that at its commencement things were very different from what they are today; beekeeping in movable combs was carried on by very few, not only in Switzerland, but also in France and in Belgium . . . today, the superiority of the new methods is no longer contested, except by a few retarders; they are advocated in France by some twenty journals and bulletins of societies, and by a dozen in Belgium." And an admirer wrote: "The seed sown by M. Bertrand has germinated well and borne good fruit."

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County Meetings in Indiana Continuing Through March and April

We publish here county meetings of the winter series of meetings in Indiana which began on the 20th of January and are to extend through the 23rd of April. The date, place and time of meeting is given in the following list to include March and part of April.

March 4, Hancock Co., Greenfield, 1:30 p.m.; March 5, Howard Co., Kokomo, 1:30 p.m.; March 6, Grant Co., Marion, 1:30 p.m.; March 7, Madison Co., Alexandria, 10:00 a.m.; March 7, Madison Co., Anderson, 1:30 p.m.; March 9, Vermillion Co., Newport, 10:00 a.m.; March 9, Vermillion Co., Clinton, 1:30 p.m.; March 10, Vigo Co., Terre Haute, 1:30 and 7:30 p.m.; March 11, Knox Co., Vincennes, 10:00 a.m.; March 11, Knox Co., Bicknell, 1:30 p.m.; March 12, Sullivan Co., Sullivan, 1:30 p.m.; March 13, Greene - Linton - Worthington - Switz City or Bloomfield, time to be arranged; March 14, Clay Co., Clay City, 1:30 p.m.; March 14, Clay Co., Brazil, 7:30 p.m.; March 16, Daviess Co., Sandborn, 10:00 a.m.; March 16, Daviess Co., Plainville, 1:30 p.m.; March 16, Daviess Co., Washington, 7:30 p.m.; March 17, Pike Co., Winslow, 1:30 p.m.; March 17, Pike Co., Petersburg, 7:30 p.m.; March 18, Gibson Co., Oakland City, 10:00 a.m.; March 18, Gibson Co., Princeton, 1:30 p.m.; March 19, Posey Co., New Harmony, 10:00 a.m.; March 19, Posey Co., Mt. Vernon, 1:30 p.m.; March 20, Warrick Co., Newburg, 10:00 a.m.; March 20, Warrick Co., Boonville, 1:30 p.m.; March 21, Vanderburg Co., Evansville, 1:30 p.m.; March 23, Spencer Co., Rockport, 1:30 p.m.; March 24, Dubois Co., Jasper, 1:30 p.m.; March 25, Orange Co., Paoli, 10:00 a.m.; March 25, Orange Co., Orleans, 1:30 p.m.; March 26, Lawrence Co., Bedford, 1:30 p.m.; March 27, Monroe Co., Bloomington, 1:30 p.m.; March 28, Owen Co., Spencer, 10:00 a.m.; March 28, Morgan Co., Martinsville, 1:30 p.m.; March 30, Bartholomew Co., Columbus, 1:30 p.m.; March 31, Jackson Co., Seymour, 10:00 a.m.; March 31, Jackson Co., Brownstown, 1:30 p.m.;

April 3, Shelby Co., Shelbyville, 1:30 p.m.; April 4, Decatur Co., Greensburg; 1:30 p.m.; April 6, Floyd Co., New Albany, 1:30 p.m.; April 7, Harrison Co., Corydon, 1:30 p.m.; April 8, Scott Co., Scottsburg, 10:00 a.m.; April 8, Jennings Co., North Vernon, 2:00 p.m.; April 9, Jefferson Co., Madison, 1:30 p.m.

Illinois Field Meetings at Marissa June 21

The St. Clair Beekeepers' Association in southern Illinois are rounding out plans for a mid-summer meeting of the Illinois State Beekeepers' Association to be held at Marissa, Illinois, June 21, 1936, at the home of Philip Krebs.

Plans have been perfected for speakers on the old standby subjects and speakers on subjects not usually discussed at beekeepers' meetings. Material for a twelve-page souvenir program is prepared and it is hoped that every beekeeper in Illinois sends for one. It will go to press in a few days and your bee inspector will have one for you or one will be mailed direct if you will write to O. G. Rawson, 3208 Forest Place, E. St. Louis.

For the business of the meeting, the following are the chairmen of their respective committees:

Program, O. G. Rawson, 3208 Forest, E. St. Louis, Ill.,; Contests, W. E. Frierdich, 1105 Bristow, Belleville, Ill.; Grounds, Philip Krebs, Marissa, Ill.; Exhibit, Arthur Dengler, Belleville, Ill.; Music, Joe Fellner, Route 1, Belleville.

Wabash Valley Roundup

Plans are underway for another big roundup of Illinois-Indiana beekeepers at Newport, Indiana, during this coming summer. It will be one of those grand old entertainments, music, fun, frolic, fish in the pan, watermelons, contests and demonstration of practical beekeeping with just a few necessary talks on important subjects.

With the help of the folks at Purdue, the program is being prepared by Lee Stewart, who is responsible for the great gathering there last summer.

One of the features of this meeting will be a demonstration of the comparison of races of bees.

Mrs. Olga Smith Deceased

Mrs. Olga Elizabeth Holste Smith, wife of Charles Smith, Idaho Falls, Idaho, died at the hospital of heart failure, a few hours after a son was born. She was born December 19, 1901, in Iowa, the daughter of John and Pauline Reichart Holste, but at-

tended grade schools and was graduated from high school at Idaho Falls. She was married December 27, 1928, at Idaho Falls.

Surviving her are her husband, the young son, Gary Ralph, a sister, Mrs. C. F. Feelern of Nampa, two brothers, Raymond Holste of Twin Falls and Ernest Hoste, Pocatello and her father and mother at Nampa.

Glen Perrins,
Utah.

Cook DuPage (Illinois) New Officers —Meeting March 7

The following officers were elected at the annual meeting at the Bismark Hotel in Chicago, January 25: President, O. A. Tryon, 6530 Oliphant Ave., Chicago; Vice-President, William Wallanches, Route 1, Downers Grove, Ill.; Secretary-Treasurer, Carl A. Olson, So. Edgewood Ave., Route 2, LaGrange, Ill.; Directors, G. A. Gill, 2240 Asbury Ave., Evanston, Ill., and E. J. McCormick, 6810 S. Winchester Ave., Chicago; Hostess, Mrs. Eleanor N. Simmer, 9607 Beverly Ave., Chicago, Ill.

There was a banquet with a menu based on honey and provided under the supervision of Mrs. Adam Bodenschatz of Lemont.

Menu

Honey Fruit Supreme
Entrees
Honey Pickles and Relishes
Choice of
Bismark Special Pork Tenderloin
Roast Veal
Mashed Potatoes
Honey Buttered Peas
Combination Salad
Assorted Rolls
Dessert
Ice Cream and Honey Top Cake
with Coffee

Wesley Osborn, of Hillsboro, State Treasurer, was present. The next regular meeting will be March 7th, Gage Park Field House, Western Ave. and 55th Streets.

C. A. Olson,
Secretary-Treasurer.

Nebraska Short Course Successful

According to all information, the Nebraska Short Course was very successful this year. The feeling of the beekeepers was excellent in spite of the fact that most of them had short crops. The Nebraska Association elected new officers as follows: President, George O. Olson, Wahoo; Vice-President, H. B. Allen, Cozad; Secretary-Treasurer, C. A. McGuire, Lincoln.

The main discussion at the meeting was American foulbrood and a request that next year the meeting be held for three days, the first day to be given over to a beekeepers school for beginners and amateurs. A resolution was passed asking for more funds from the legislature and a committee of representative beekeepers from all the different beekeeping sections was appointd to start work at once on getting support.

One of the most important papers at this meeting was by Leroy Baxter, "Ten Years Fight on American Foulbrood," which we will publish in one of our next issues.

Florida Association at Tampa Fair

From the Tampa Sunday Tribune of February 2nd, we read about the great Tampa Fair in which the Florida Beekeepers' Association again was in evidence. Quoting from the paper "An oddity among the wonders at the Fair is a collection of stingless bees like a rose without a thorn. Among twenty tons of varying colors of honey, was 20,000 jars. The exhibits were entered by the Florida Association and is the largest apiary and honey show in the world."

We don't know about the stingless bees but the honey sounds all right.

(Clipping furnished by Alfred Pering, Florida.)

Report of Kansas Beekeepers' Meeting

If the winter meeting of Kansas beekeepers, held at Manhattan, Feb. 6, is a harbinger of the coming summer convention, surely we may now predict the miraculous revival of our State Association at the Topeka meeting next July. Old-time members of the Association said that the attendance was the largest in many years, and the Fairchild hall on the College campus, where the beekeepers met, was crowded to overflowing. Although the weather was against rather than favorable to the meeting, Kansas beekeepers seemed to have decided to take a new lease on their vocation.

The program of speakers, under the direction of Dr. R. L. Parker, was for the most part carried out, and there was much to stimulate thought, the highly specialized and more technical being presented by C. L. Farrar of the United States Field Laboratory, Laramie, Wyo., and the every-day practical and always useful side of beekeeping being given by O. S. Bare, extension entomologist of the University of Nebraska. So we had a "balanced ration."

Following the lectures, a business meeting was held. President O. A. Keene being absent, the secretary-treasurer of the Association, H. W. Stewart, presided. He presented a business program for ratification. From the organization standpoint, it provided for one county vice-president from each beekeeping county to effect a closer state-wide organization. It also provided for the cooperative purchase of supplies for its members, giving them a preference discount of 25 per cent off from the catalog quotations on which they ordinarily buy their supplies; and offered also the service of the Association in securing beekeepers' magazines at one-half regular rates. These points in the program were adopted by the Association; but the one offered which provided for a standardized minimum price for honey was laid over until the summer meeting.

Besides the important matters of cooperative effort, it is the intention of the state organization to secure for the ensuing season dealers' discounts on queens and package bees.

Mr. Stewart, in stressing these economic problems, said that if the Association could offer nothing more than a social program for its members, there was not, in his opinion, any great justification for its existence. But that when positive economic advantages were provided, then the Association would have also the positive support of its members. In order, therefore, to carry on the new and aggressive program it was voted by the Association to make the annual membership dues $1.00 a year.

H. W. Stewart,
Secretary-Treasurer,
Kansas.

Utah Association Elects New Officers

Ray N. Miller, Salt Lake City, Utah, general manager of the Miller Honey Company, was elected president of the Utah State Association at the annual convention. Other officers were: Ruben Rhees, Ogden, manager of the R. T. Rhees and Sons Co., vice-president; Leslie Walling, Salt Lake City, secretary and treasurer; A. G. Pledger, Ogden and J. F. Wakefield, Provo, directors.

Beekeepers reported prospects for 1936 highly encouraging because of snow and rainfall. Honey is pretty well sold and the market outlook is good.

M. S. Stone, General Manager of the Superior Honey Company, Ogden, was the principal speaker. He urged the support of National Honey Institute of which he is Director. He urged the beemen to organize a marketing body and market their honey, thus getting more for their product. He urged everyone to tie-up with the Institute.

Dr. Hendricks, Utah Department of Agriculture and inspector of apiaries outlined problems of inspection and financial success during the past year and urged continuance of the help for beekeepers. B. C. Huston, Utah State Planning Board, advocated a better system of planning and management for beekeepers, urging a systematic method of marketing honey. He said with cooperation, the Utah beekeepers should become a powerful marketing group.

The women's auxiliary of the Association elected Clarence S. Miller, Salt Lake City, president; Afton Rhees, Ogden, vice-president, and Lucille Walling, Salt Lake City, sec-

retary-treasurer. The auxiliary arranged an exhibit of home cooked foods from honey recipes.

Glen Perrins,
Utah.

Morgan-Scott Now Lower Illinois Valley

The Morgan-Scott Association (Illinois) met in February at Earl Houston's at Beardstown, with a good attendance despite the inclement weather. The main issue was the selection of a new name for the association since its members are from six or more counties. The event was staged as a contest, members submitting names which they thought appropriate, the winning name selected by a delegate from each county and a prize to the winner.

"Lower Illinois Valley Beekeepers' Association" was selected as the winning name, submitted by Mr. Leonard Robins, of Ripley, the first prize a choice queen bee, raised by State Association President Duckwall.

The ladies conducted a honey pumpkin pie contest with Mrs. Hoyt Taylor winner and Mrs. Laura Ater, second. Then the pies were served. Yum-yum!

Piatt County Annual Meeting

The Piatt County Association (Illinois) held its annual meeting January 18th in the Community House at Monticello. The following officers were elected: Willard W. Smith, DeLand, President; Ralph McInnes, White Heath, Vice President, both reelected; S. O. Stevenson, DeLand, Secretary and Treasurer, to succeed Emory Warner who had rendered 15 years of continuous and faithful service in that office.

It was voted that the association have a regular meeting night once each month, six meetings in Monticello and the rest to be divided over the county (DeLand, Cisco, Bement, White Heath, Milmine and Cerro Gordo).

Ralph McInnes gave an account of the six meetings over the County last year and Inspector C. W. Mussulman reported on his work.

Plans were also made for a continuation of the Central Illinois Beekeepers' Picnic, held last year in Monticello, and to be held again there this year or in Decatur in July. Twelve counties were represented last year and we hope to have more this year.

Members feared heavy winter losses because of the severe cold. Plentiful snow, however, may give us a good clover crop next year.

Music for the meeting was furnished by the Little German Band of DeLand and the Association wishes to extend a vote of thanks to the Band for their kindness. Piatt starts the New Year with 22 members.

S. O. Stevenson,
Secretary.

Pierce County (Wash.) Annual Bee School

The 15th annual Bee School was given at Puyallup, Washington, Saturday, February 1st under the auspices of the Pierce County Agricultural Agent, A. M. Richardson.

Special emphasis was given to the economic phases of the industry. Pursuant to this idea the question: "What does it cost to produce a pound of honey?" was considered by the beekeepers, led by Rev. M. F. Mommsen, who was very ably assisted by Mr. J. W. Peterson, of Puyallup.

Mr. Peterson has kept a record of the cost of production for a period of about 15 years. These figures formed the bases for the discussion, together with the government studies on beekeeping costs. Owing to climatic conditions in western Washington migratory beekeeping is essential and must be resorted to by the commercial beekeeper, and adds considerable to the cost of production.

In this particular locality, figuring a yield of 80 pounds per colony it was found that it cost $0.067 per pound on the basis of one hundred colonies.

Other subjects discussed were: keeping accounts of the cost of production, and how to keep a hive record.

A. J. Hanson, entomologist, western Washington Experiment Station, Puyallup, discussed "Spray Poisoning." In his discussion very little relief was promised, from this devastating curse, at least not for the near future. Practical hints however were given how at least some bees can be saved, none of which are practical for the commercial beekeeper.

A mid-summer beekeepers' meeting for the West Side was arranged for, and the suggestion by letter from H. F. Wilson, chairman of the Finance Committee of the American Honey Institute that Mrs. Jensen visit Washington and other western states in June was very enthusiastically endorsed. The tentative date was set for some time in June.

A committee on arrangements was elected. The noon hour was devoted to extending congratulations to Mr. and Mrs. A. E. Ternan. Mr. Ternan, the president of the association had on January 18, taken unto himself a wife, a Miss Wyonona Mather, of Puyallup. A wedding cake baked by the vice president Mrs. J. W. Peterson, was appropriately cut by the bride, and very much enjoyed by all. The groom was re-elected president, Mrs. Ryan, secretary, and Mrs. J. W. Peterson, vice president.

M. F. Mommsen.

American Honey Institute NEWS NOTES

Honey Walnut Layer Cake

PILLSBURY Flour Mills has announced active promotion of Hon-Walnut Layer Cake. The following programs included publicity on this item: Cooking Close-Ups, Wed., Feb. 5; Today's Children, Feb. 5 to 7, N.B.C.

Family Reunion Cake or Honey Walnut Layers

Recipe makes two 9-inch layers.

Temperature: 375°F. Time about 30 minutes.

- 2½ cups Pillsbury's Sno Sheen Cake Flour
- 4 teaspoons baking powder
- ¼ teaspoon salt
- ½ cup shortening
- ¾ cup sugar
- ½ cup honey
- ¾ cup water
- 1 cup chopped, English walnut meats
- 4 egg whites

1. Sift flour, baking powder and salt together.

2. Cream shortening; add sugar gradually; beat well.

3. Dissolve honey in water. Add sifted dry ingredients, alternately with honey and water, to creamed mixture; beat well. Add nutmeats.

4. Beat egg whites stiff but not dry; cut and fold into batter.

5. Bake in greased pans, lined with waxed paper, in moderate oven. Cool. Put layers together and cover top of cake with Honey Butter Icing.

Honey Butter Icing

- 2 tablespoons butter
- ¼ cup honey
- 2 cups sifted confectioner's sugar
- Few grains salt
- Cream or top milk, as needed.

1. Cream butter and honey together; add sugar gradually. Beat well after each addition to keep icing soft and smooth. Add salt.

2. Add cream or milk, as needed, to make spreading consistency. Icing should be quite soft.

This cake is a product of the Bakery Research Department of Pillsbury Flour Mills in their release to bakery salesmen. The cake was featured with radio broadcast announcements, offers of cards and window posters, requesting that every bakery be given the story of Honey Walnut Layer Cake.

Among the store pieces was a beautiful broadside with a full picture of the cake, the colors very attractive.

This is the second great piece of publicity for the use of honey this winter has produced, first the Honey Chocolate Cake undertaken by General Mills last October.

Cooperate With Pillsbury Salesmen

It is suggested that beekeepers wherever possible cooperate with the Pillsbury salesmen in seeing that bakers know about Honey Walnut Layer Cake and that they have the finest flavored honey possible to obtain to bake this particular item. If the beekeeper does not have honey, let him try to locate the amount necessary for this feature.

Miss Rock, Home Economist for Pillsbury, is suggesting this cake to homemakers under the name of Family Reunion Cake. It was taken from an original Institute Honey Nut Cake.

Mrs. Jensen's Western Trip

Mrs. Jensen's trip into the Western States resulted in much added friendship for American Honey Institute. Writing about the visit to Oregon, H. A. Scullen, Secretary of the Oregon Association says, "I am convinced that the visit is one of the biggest things that has been done for the support of the Institute. I am sure that everyone who saw the demonstration is throughly sold on the Institute and I only regret more beekeepers were not able to be present. I had my eyes opened and I am sure that others feel the same way."

More of this kind of work is needed. Beekeepers as a whole do not yet know much about the work of American Honey Institute.

Keep Up Your Membership

In checking memberships received this year, with the names listed in the 1934 Honor Roll, up until the first of November, 63 per cent of those listed failed to renew their 1934 membership. The 1934 list was 830 names and only 308 renewed up to the first of November. Since that time, many more names have been received and the new Honor Roll for 1935 is being published.

Don't fail to keep up your membership. Many beekeepers are now adding to their letterheads that they are members of American Honey Institute and this they are finding a help to them in the sale of honey. The Institute is on its feet before the consuming public, but too many beekeepers have failed so far to secure membership.

For information about American Honey Institute and its activities or material available for the use of beekeepers, address American Honey Institute, Madison, Wisconsin.

"ST. ROMAIN'S HONEY GIRL" ITALIANS

Are Bright Yellow-Banded, Gentle, Hardy and Great Honey Gatherers.

Our customers praise them very highly.

WE BEGIN SHIPPING APRIL 1st

Unit (any number)	To Jun.1	After Jun.1
Select Untested Queen	$ .75	$ .50
Tested Queen	1.50	1.50
Select Tested Queen	3.00	3.00
(Packages & Nuclei Prices) (include Untested Queen)		
2-Pound Package	2.45	1.95
3-Pound Package	3.15	2.55
4-Pound Package	3.85	3.15
2-Fr. Nu., 1 extra lb. bees	2.55	2.05
1-Fr. Nu., 2 extra lbs. bees	2.85	2.35
2-Fr. Nu., 2 extra lbs. bees	3.25	2.75

10% Deposit books order in advance.

15% Discount to dealers.

We are not honey producers, you will get young bees produced for the package business, pure stock, and queens as good as any Italians you can buy at any price.

Hundreds of satisfied customers, 17 years' experience your guarantee, prompt service, quality, satisfaction and safe arrival.

La. State Dept. of Agri. certificate with each shipment of bees and queens.

"You may be interested to learn that the 3 queens you sent me arrived safe and in good condition of 8 July after 13 days in the mail."—W. B., England.

"Je ne sais si je vous ai deja dit que j'ai recu les 70 paquets que vos m'avez envoyes—tous en tres bonne condition—2 reines etaient mortes je les ai remplacees par les deux que vous m'avez envoyees. Je suis bien satisfait."—A.P., Que.

"A couple of years ago I purchased a few queens from you. Two of these I sold to other beekeepers for breeders and one I selected for my own use."—W. A. H., Calif.

"This is the 3rd year we are having your stock put into our yards picking the best for following year to requeen our yard."—F. B., Ont.

"The 100 packages came through in fine shape, not over a quart of dead bees in the whole lot."—R. R. V. T., Ont.

"The two packages purchased from you in April, 1934, did very well and I am enclosing $1.22 to insure my order for 5, two-pound packages to arrive here April 16. The two packages mentioned made over 125 lbs. each which is unusual for eastern Vermont."—L. H. T., Vt.

"I would like to tell you that the 100 pkgs. got here in good condition. I never had a better shipment before. They are a nice gentle lot, it is a delight to work in them."—B. R. G., Mich.

"ST. ROMAIN'S HONEY GIRL" APIARIES
HAMBURG, LOUISIANA

PURE ITALIAN QUEENS

Stock Imported from Northern Italy

Pure Italian queens, bred from mothers imported from northern Italy. All leather colored. You'll like them. They are different.

Will begin shipping about April first.

PRICE—75c EACH, ANY NUMBER.

Middle Tennessee Apiaries
JOE B. TATE & SON
1029 LISCHEY AVE. NASHVILLE, TENNESSEE

KOEHNEN'S PACKAGE BEES

THREE-BANDED ITALIAN QUEENS

5,000 Colonies; Dependability
27 Years' Experience; Quality

Let Us Quote You On Your Requirements.

KOEHNEN APIARIES, Glenn, Calif.

NOW IS THE TIME

To figure your needs for the coming season and place your order early that you may receive the shipping date you prefer. We are making all preparations now to serve you promptly with the best quality of bees and queens obtainable. Our shipping cages we consider perfect in every respect. Extremely light, but made of tough material, right dimensions and easy to manipulate. Bright Three-Banded Italian Stock. Write us for circular and prices.

COTTON BELT APIARIES, R.F.D. 2, Paris, Texas

ITALIAN BEES ★ AND QUEENS

From the Heart of the Sacramento Valley. Order now from us at following prices: 2-lb. Package, **$2.45**; 3-lb. Package, **$3.15**. Dealer's discount, 15%. Member of California Bee Breeders' Association.

I. W. MYERS :: COLUSA, CALIF.

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Oldest and largest Milk Goat magazine published. Broadest circulation. Articles by best authorities. Subscription rate one year $2.00; three years $4.00; five years $6.00.

Sample copy 20c.

Address:

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Vincennes, Indiana

PACKAGE BEES

Write for our circular and proposition to trade packages and queens for extracted honey.

GOOCH APIARIES, Farmersville, Tex.

Golden and 3-Banded Italian QUEENS

Reared in separate yards. Untested queens 75c, tested $1.50. Fancy breeders $3.00, to $5.00. Season opens about April 20. No deposit required to book your order. Health certificate. Guaranteed to please.

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Guilford College :: North Carolina

Package Bees and Queens

By Pound, Ton or Car.

Service - Satisfaction

Trade Agreement Prices. Write for particulars.

VICTOR APIARIES :: KYLE, TEXAS

BEE SUPPLIES

We have a complete stock on hand at all times, so we can give you quick service.

A. H. RUSCH & SON CO.

REEDSVILLE, WISCONSIN

ITALIAN

BEES AND QUEENS

"Good or Made Good"

ALONZO McKAY

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Inquiries cheerfully answered.

Save On Your Bee Papers

American Bee Journal, one year, $1.

Bees and Honey, one year, $1.

BOTH TOGETHER, $1.60

Send orders to

AMERICAN BEE JOURNAL

Hamilton, Illinois

Will Advertising With the Honey Institute Pay Dividends

By H. D. Whitaker,
California.

FIRST I would like to point back forty or fifty years. Several of us can remember that far. **A man's horizons then reached as far as a team of work horses hitched to a wagon could take him in a day.**

We usually went fifteen miles to town and made it in a day if we got up early enough and drove until ten o'clock at night, having but a little time to go to the mill and shop a little. We had a few country stores remote from the cities, and smaller towns where we could do a little trading. There was usually a post-office in one corner of the store where we could get our mail if some of the family or a neighbor went some five or ten miles to the store. We went at least once a week, sometimes once in two weeks.

In those times it did not pay to advertise because when a farmer went to town he traded with either Smith or Jones who did no advertising as it would have been money out with no chance of any returns.

Times have changed. The horse and wagon days are over. No longer do we jaunt to town behind old dobbin. No longer do we hear the creak of the old Studebaker wagon. No longer do we include a box of Frazier's axle grease with our town purchases. No longer do we soak up the wheels of the old wagon in the pond over night so the tires won't fall off on the way to town.

The time was that one of your neighbors had a few bees in "gums," those mysterious things out of which he gouged a little honey once in a while and sold it for fifteen cents a pound. And was it considered a luxury to be used sparingly and only on special occasions! And was it good! It was this the old writers called the "Nectar of the Gods."

Honey is today just as good as ever and instead of being a luxury, it has become one of the staple foods, along with bread and potatoes, in many homes. Instead of being sold to a few neighbors, its use has branched out until it reaches every hamlet. Not only the American table but the tables of the world have ample room for more honey than ever before.

There is little likelihood of getting people to eat MORE food. But they can be induced to eat more of a CERTAIN kind of food. Although honey is one of the best foods for old and young in every climate, it has a number of competitors. We must realize that the person with a commodity to sell must now compete with the world. The world is his market, and he must let the world know what he has to sell and make it clear that it is an advantage to deal with him.

He will find competition keen and that more and more commodities are being put up in more attractive packages and that the quality is continually being improved and his business must keep abreast of the times. He must advertise his business and his special articles of trade.

At one time the farmer was a farmer. Things have changed. Today a farmer is also a business man and as a business man he must enter the field of advertising.

Take for example, what has been accomplished in the citrus industry which started in a small way. Today California fruit is known and used in every country in the world. Why? Because millions of dollars have been spent in advertising and it has paid well.

I would like to call attention to the poultry industry in the West, especially in California. One man in South Carolina paid $13 for 100 day-old chicks and $13 air mail delivery because he wanted Escondido chicks from a certain hatchery which had been advertised. Also Escondido grapes are known all over the United States because they are good and have been advertised.

I happen to know a man at Covina, California, who had an article of food he wanted to place on the market but was not financially able to do so. He approached W. K. Kellogg (and you all know Kellogg's corn flakes). Mr. Kellogg told him that he was getting too old to launch in new fields but if he were to take it, the first thing he would do would be to spend $100 in advertising.

Now if Mr. Kellogg finds it pays to advertise, with his years of experience, it stands to reason that it will pay anyone in business to advertise.

The scope of usefulness of our business is more far reaching than most people imagine because it is very necessary that we have bees as pollenizers in addition to the production of honey, one of the most useful foods the world has ever known. It is up to beekeepers to let the world know about it. In other words

if we don't toot our own horn no one else will and we have something worth while to toot about. But the tooting must be through systematic advertising and putting an honest, attractive package on the market.

Individually we can do but little; but beekeepers have an organization, the American Honey Institute of Madison, Wisconsin. The business of the Institute is to tell the world just what honey is worth in the home as a food.

But here comes the snag. The Institute cannot carry on without financial support and that support must come from the producers of honey for they are the ones who will benefit by the work of the Institute.

Now the question with the beekeeper is: **How will I benefit by the advertising of the Institute and will it pay ME dividends on the money I invest in the work of carrying on the Institute?**

As I see it the American Honey Institute is the only organization of its kind in America and the producers of honey will be the ones to reap the benefits from its activities and if this work of advertising is not supported by the beekeepers of America similar organizations in foreign countries will step in and by careful advertising gobble up our markets. The very doors that are now standing ajar for the beekeepers of America will be closed by foreign invasion and our own industry will suffer irreparable loss. Each beekeeper, whether he has only a small number of colonies or a large investment, will suffer loss, as the larger markets will be taken from the commercial beekeeper and he will in turn flood the local markets until the smaller beekeeper cannot market at a profit, if at all.

It seems to me that we beekeepers must realize that to market our honey at a living wage, we will be compelled to keep up with the march of progress, the pace the world has set. We must enter the field of advertising extensively enough so the value of honey as a food may be known in every home.

As far as our own consumption is concerned, the surface has not as yet been scratched but the only way to get the facts before people is to advertise through an experienced organization.

We have just such an organization in American Honey Institute, and any investment in it will pay dividends. But it must be supported if it is to accomplish the thing that means the life of the bee industry in this country and that thing is advertising.

There is no question in my mind but that it pays well to advertise and that advertising with the Honey Institute will pay big dividends.—(Paper before San Diego Meeting. Furnished by Fred Hansen.)

Package Bees and Queens

"Magnolia State" Strain Three-Banded Italians

Scientifically produced for a definite purpose. We do not scour the country for odd lots of bees to shake into packages for you. With supply manufacturing facilities of our own, we are enabled to make increases as business justified from year to year.

Specializing in Queen Rearing since 1915, we feel we can offer you queens of PROVEN QUALITY. Write for circular, or order direct from this advertisement. Prompt shipments, lowest express charges, and Highest Quality are assured here.

PRICES:

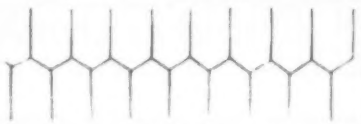
Two-Pound Packages with Select 1936 Queens	$2.45 each
Three-Pound Packages with Select 1936 Queens	3.15 each
QUEENS, Select Untested (No culls)	.75 each

BEES ON COMBS: Not just a comb package, but good old-fashioned nuclei.

Two Frames Brood and Honey, Two Pounds Bees and Queen Introduced	$4.15 each
Three Frames Brood and Honey, Three Pounds Bees and Queen Introduced	5.60 each

JENSEN'S APIARIES, MACON, MISS.

FOUNDATION



is an absolute necessity in a well managed bee yard. It insures perfect combs in the brood chamber and eliminates drone cells to a minimum.

In producing comb honey, thin super foundation helps the bees to do expedient work resulting in honey that commands the highest market prices.

Send us your wax to be worked into foundation at the lowest possible price.

We carry a full line of beekeepers' supplies.

SEND FOR PRICE LIST

GUS DITTMER COMPANY, Augusta, Wisconsin

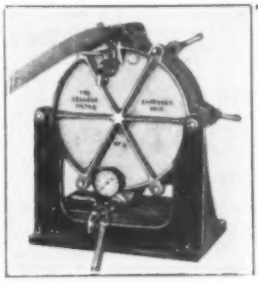
Not Too Big for Little Business.

Not Too Little for Big Business.

Package Bees and Queens Beginning April 1.

J. M. CUTTS & SONS

Route No. 1 Montgomery, Alabama



HONEY FILTERING!

Special equipment for filtering honey. Amazing results in brilliantly clear, stable honey, with high sales appeal. Simple process. Profitable investment. Filter, mixing tank, flash heater, complete outfit—investigate! Write us—no obligation.

THE CELLULO COMPANY

1321 FIRST STREET SANDUSKY, OHIO.

PACKAGE BEES -:- QUEENS

75c for queens. 2-lb. package with queen, $2.45. 3-lb. package with queen, $3.15. 15% discount to dealers.

Over 25 years' experience. 10% down books order.

WE DO LOTS OF TRADING. WHAT HAVE YOU TO TRADE?

BLUE BONNET APIARIES, Route 1, Box 33, Mercedes, Texas

A Good Rule to Go By
Buy your bees and queens from
ALABAMA APIARIES
MT. PLEASANT, ALA.
Book your order early. Queens 75c.
Packages, $2.45 and $3.15.

Package Bees & Queens Satisfaction Guaranteed
Health certificate, fast direct overnight express to North. Customer said ours were the best he had ever handled; another said our queens tied for first place in production in a test. J. H. Waibel is our breeder, for years breeder for David Running, at Sumterville, Alabama.
A. J. HOOK & CO. :: EUTAW, ALA.

Hold On!
Give us but ONE package out of your regular yearly orders. Check hive this fall against the best hive you have. You'll get the surprise of your life.
Our GOLDEN ITALIANS are not only gentle, large and pretty to look at, but most important—THEY PRODUCE!
All queens guaranteed personally reared, this year's stock.
Minimum prices marketing agreement.
SPOERRI APIARIES
ST. BERNARD P. O., LOUISIANA

WANTED
TEN TONS OF BEESWAX
FOR CASH OR TRADE

EBY'S Busy Bee Brand FOUNDATION
Four times as much foundation in 1935 as ever before. For 1936, new refining, new 10,000 foot fireproof building. Let's go. Write for our new low prices on working old combs and wax into our true base, non-sag foundation. Wax accepted on foundation work, bee supplies, packages or nuclei.
Let us ship you package bees, nuclei or full colonies from the South by express or truck. I. A. Stoller, Northern queen breeder and honey producer, in charge of our southern shipping business. All packages and nuclei headed by Stoller Queens. Write us.
When better foundation is made, Eby will make it.
When better queens are reared, Stoller will raise them.
Ask the men who use them. Reference Dun & Bradstreet.
Highland Apiaries and Factory **West Elkton, Ohio**

ATTENTION PLEASE!
Here we are again—Stevenson's GOLDEN ITALIAN QUEENS, raised the very best way in southern Louisiana, where we have a very early and continuous honeyflow.
This natural environment causes our bees to feed us abundantly with just the right food to develop us properly and make us large, uniform, and very prolific—REAL QUEENS OF QUALITY.
Our progeny are large, very gentle, and the best of honey producers. Write to **STEVENSON'S APIARIES**, Westwego, La. for descriptive circular. Quotations on package bees and queens as per Marketing Agreement.

TRY PETERMAN'S
Italian Queens & Package Bees
None better. Prompt service. Code prices. Discount to dealers.
H. PETERMAN, LATHROP, CALIF.

Choose Labels Wisely
You Can't Go Wrong with A-B-J Labels
They sell honey and are priced right.
Send for complete catalog
AMERICAN BEE JOURNAL
HAMILTON, ILL.

PIGEONS
If you are interested in Pigeons, you need the AMERICAN PIGEON JOURNAL, an informational, instructive 36-page monthly magazine. Sample 15c; 12 months $1; three years $2.
AMERICAN PIGEON JOURNAL
Dept. B Warrenton, Mo.

A VALUABLE MAGAZINE
$1.00
PER YEAR
2 Years, $1.50; 3 Years, $2.00.
Foreign—
1 Year, $1.25; 2 Years, $2.00; 3 Years, $2.75.
WRITE FOR SAMPLE COPY

"Gleanings in Bee Culture is so thoroughly practical and valuable from not only a production standpoint but also in sales promotion ideas, that we wish to have the numbers bound for quick reference."—A. F. D., Ohio.
PUBLISHED BY
THE A. I. ROOT CO.
Box G-2 Medina, Ohio, U. S. A.
Gleanings in Bee Culture—1 Year
American Bee Journal—1 Year
$1.60 In U. S. A.

YANCEY HUSTLER

PACKAGES AND QUEENS
They get the Honey
For early shipment
Standard prices.
Caney Valley Apiaries, Bay City, Texas

Hilbert Method CUT COMB HONEY

Write for our catalog which will include free, full information on Cut Comb Honey Hunks and Chunks.
James E. Hilbert, Traverse City, Mich.

Renew Your Subscription
Write for Our Special Club Offers on Popular Periodicals
American Bee Journal - - - - Hamilton, Illinois

Mention American Bee Journal when writing advertisers.

ADVERTISING PAGES REMOVED

Crop and Market Report

Compiled by M. G. Dadant.

For our March Crop and Market page, we asked reporters to answer the following questions:

1. How much honey left on hand?
2. Will it move by May 1?
3. How will bees come through?
4. Honey plant prospects?

Honey Left on Hand

As has been surmised earlier, there is very little honey left on hand. A few individual reporters state they have as high as 50 per cent of their crop on hand but the average over the entire country would not be over 10 per cent of the crop if that much. Many communities report no honey left at all and a demand which should be supplied.

We believe that the dearth of honey exists particularly in the Southeast, East and in the plains states areas. Undoubtedly, in the plains states, the continuing cold weather has called for a heavier consumption of honey than usual. This, combined with the fact that the crop was sold promptly last fall, gives a shortage. Sections having perhaps the most honey include those where a good fall crop was gathered. We find that a number of reporters in the central western communities in the fall flow region still have considerable honey on hand and report others with a fair supply. The intermountain crop has mostly moved as has that of California, there being only a few reporters who are still holding considerable quantities of honey and this either for higher prices or for security to their own customers. In Canada, western Canada is pretty well cleaned up on honey although there seems to be a fairly good supply in Ontario and Quebec.

Will Honey Move?

With only one exception, reporters stated that all of the honey on hand would move by May 1 to June 1. Many of them already had to report no more honey to move and many others stated that the movement was beginning to pick up again after the holidays with shortage of stocks in producers' hands and many bakers and jobbers now gradually getting out of honey and needing new supplies. There is hardly a doubt that all of the available honey will move before the new crop provided the producer is willing to sell at somewhere near market prices. We refer our readers to the February issue for a suggested schedule of prices.

Condition of Bees

It has often been said that if someone loses, somebody else gains. During this present severe winter, it looks like the southern package shipper was going to be the gainer. Practically throughout the entire north half of the country, reports come in of extremely severe and prolonged cold weather with the possibility of heavy losses in bees. The cellar winterer this year is going to laugh up his sleeve at the outdoor winter man and the outdoor winter man who packs is going to have a little laugh on the unpacked bees. Cellar wintered bees apparently are coming through in good shape and unless the spell of weather is prolonged indefinitely, cellar wintered bees should come through without loss. We find a few instances where cellars have had to be heated on account of the extreme cold but in most cases, the bees are coming through satisfactorily. Where bees have been packed extremely thoroughly outdoors, perhaps they will also survive without great loss and this also applies to bees which have been covered completely over by snowdrifts which act as the very best protection against extreme cold and especially the high winds.

However, there is very grave doubt in the minds of most beekeepers as to the percentage of loss (this is being written on February 20). In some few instances, the honey stores were not as satisfactory as they might have been but in most instances the reporters suggest that the continued excessive cold perhaps will not allow the cluster of bees to move over from one frame to another and the bees will starve with plenty of honey in the hives owing to the extreme prolonged cold weather. This is our own feeling. Undoubtedly the losses are going to be heavier than usual but just how high they will run is a question. Some reporters are suggesting as high as 50 per cent loss. Our idea would be that perhaps a 20 to 25 per cent loss. In our own section in Illinois, bees had their last flight on January 16 which means nearly six weeks of cooped up weather with extremely low temperatures.

Far and wide we can look for heavy losses and a heavy demand for package bees apparently because of the prospects for a crop and the optimistic attitude of most beekeepers compared to two or three years ago.

In the intermountain section, bees seem to be coming through fairly satisfactorily so far although, of course, the continued cold also applies there. Along the Pacific coast, bees are in excellent condition as are they in Arizona and New Mexico.

In the South, perhaps the unusual cold weather has helped because it has held down the consumption of honey and bees will come through in the spring breeding season with more honey available than usual so that less feeding will be necessary and perhaps less losses. Southern producers and breeders do not seem to be pessimistic over the condition of the bees.

Honey Plants

If reporters are to give us any idea, then we would say that the condition of honey plants is far above normal and far above what it has been many years in the past. Throughout the entire white clover region extending far south, the ground has been covered with snow for a considerable period of time. This, combined with rainfall last fall which put white clover and even sweet clover plants in good shape, should react toward excellent prospects when the spring opens up. There are, however, some exceptions because of the fact that in many sweet clover sections, the drought of former years has reduced the amount of acreage and even last year in some sections, particularly western Nebraska and eastern Colorado, the drought extended up until recently when snows have helped. In the mountainous sections, there are abundant snows and prospects seem satisfactory provided the sweet clover plants are there. In southern California, the rainfall has been far deficient although recent information is to the effect that rains have been falling and conditions may be made up. It is, however, probable that the unirrigated section producing the sage and buckwheat may not yield a satisfactory crop and some reporters are extremely pessimistic over the possibilities in southern California. Other sections of that state seem satisfactory.

Throughout the entire southern and southeastern areas, prospects seem satisfactory although perhaps there is some loss to honey plants through low temperatures.

Summary

All in all, we would say that the honey crop is going to move completely out of the hands of the producers before a new crop is produced and the market be fairly bare of honey. In fact as bare as we have had it for a number of years. There will be far heavier losses of bees than there have been for quite a few years but there is optimism generally among the beekeepers on account of the extremely desirable honey plant conditions and undoubtedly the demand for package bees is going, as a consequence, to be heavy. It is only to be hoped that conditions will be normal or better than normal in the package producing areas when the shipping season arrives. Should we have one of those cold miserable spring seasons, and it is extremely difficult to get the packages out, then there would be a dilemma facing both the shipper and the buyer of packages in the North.

We were surprised at the number of producers who stated that undoubtedly they would need a quantity of packages this year and anticipated getting them.

ADVERTISING PAGES REMOVED

The BEEKEEPER'S EXCHANGE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

ITALIAN Queens. Northern bred, for Northern conditions.
Eugene Gordon, Hershey, Nebraska.

CAUCASIAN BEES AND QUEENS booked up for 1935 but accepting orders for 1936 delivery. Bolling Bee Co., Bolling, Ala.

THREE-BANDED Italian bees and queens for 1936. Write for prices. Alamance Bee Company, Geo. Elmo Curtis, Mgr., Graham, North Carolina.

TRY PETERMAN'S Italian queens and package bees; 19 years in the business; good quality, prompt service. We can please you. Code prices; discount to dealers.
H. Peterman, Lathrop, Calif.

BUY made-to-order nuclei. Truck them yourself; save money. Write us what you want. We will quote prices. Combless packages delivered here or expressed.
Elevation Apiaries, Milano, Texas.

CARNIOLAN & ITALIAN BEES & QUEENS —Tested $1.50, untested 75c. Write for prices on bees.
Mrs. C. B. Bankston, Buffalo, Texas.

CAUCASIANS — Young laying queens 75c. Millers Caucasian Apiaries, Whitsett, Texas.

ECONOMY PACKAGE $1.95 EACH. Yes, you may have to economize to fill up those empty hives. Here's how. Buy my large oversize 3-pound packages with extra queen, price $3.90 each with two queens, divide and you have two good swarms, costing you only $1.95 each. Others do it, so can you. You also save on express. Write for full particulars. Three-banded Italians only. A. W. Nations, Donna, Texas.

THREE-BANDED ITALIAN bees and queens. There is money in package bees when you buy right. We can make early shipments on two and three-pound packages of bees with queens; ship at any time you say, March, April, May and June. 500 one-story colonies of bees in modern ten-frame standard equipment at $3.50 each. Truck them yourself; we are located on paved highway. Health certificate with all bees.
Little River Apiaries, Box 83, Gause, Texas.

BOOKING ORDERS for Packages of Italian Bees and Queens at Agreement prices. Better order early; big losses all over the South. N. S. Gladish, No. 5 Hobbs Rd., Nashville, Tenn.

PACKAGE BEES SPECIAL — Italian bees with pure Caucasian queen, 2-lb. pkg. $2.45; 3-lb. pkg. $3.15; 5-lb. pkg. $4.55 Express collect. Caucasian queens 75 cents each. Safe arrival and satisfaction.
Tillery Brothers, Greenville, Alabama.

BEST MOUNTAIN GRAY Caucasian bees and queens. Select queens 75c each; 2-pound package with queen $2.45; 3-pound package with queen $3.15. Full weight, safe arrival guaranteed. Book order now to reserve your shipping date.
P. B. Skinner Bee Co., Greenville, Ala.

ITALIAN BEE PACKAGES, nuclei and queens. Will take honey, wax as payment for bees. Used foundation mill.
Homer W. Richard, ElDorado, Arkansas.

SILVER RUN QUEENS—We offer queens from the best three-banded stock we can breed or buy. Cells built in mammoth colonies. Queens mated from strong nuclei. Each queen carefully inspected before shipment. We have reared thousands of queens that have given satisfaction throughout United States and Canada, working for up-to-date southern queen and package shippers. Write for special price on number of queens you need. Our motto: Each queen an advertisement for SILVER RUN APIARIES, Route 1, Phenix City, Alabama.

QUEENS—You have tried others, now let us solve your queenbee problem. Our own Italian strain the result of 20 years of select breeding. First shipment of this season's queens about March 10th. Price to June 1st for guaranteed, select untested queens, 75 cents each, any quantity. Usual 15% discount to dealers.
Edson Apiaries, Gridley, Calif., Butte Co.

GOLDEN ITALIAN QUEENS, Untested 75c each, May delivery. Tested $1.50, Select Tested $2.50.
Sam Hinshaw & Son, Randleman, N. C.

HONEY FOR SALE

FOR SALE—Northern white extracted and comb honey.
M. W. Cousineau, Moorhead, Minn.

CHOICE Michigan Clover Honey. New 60's.
David Running, Filion, Michigan.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—Well ripened clover honey, car lot or local shipments. Will be pleased to submit sample. THE COLORADO HONEY PRODUCERS' ASSN., 1424 Market St., Denver, Colorado.

FOR CHOICE AMBER extracted honey address Henry Stewart, Prophetstown, Ill.

FOR SALE—Comb and extracted honey.
Earl Baker, Genoa, Illinois.

FANCY CLOVER and fall honey.
Kalona Honey Co., Kalona, Iowa.

WE OFFER white and amber extracted honey in pails or 60-lb. cans; also comb honey. Reasonable prices. A. I. Root Co., 224 West Huron St., Chicago, Ill.

FOR SALE—Fine grade light amber bulk comb honey.
Hyde Bros., New Canton, Ill.

A CAR of sweet clover honey.
George Seastream, Moorhead, Minn.

MICHIGAN white clover honey in new sixties. O. W. Dilley, Grand Ledge, Mich.

FOR SALE—Comb, also extracted in sixties. Sample, 15c. C. Holm, Genoa, Illinois.

AMBER in new 60's, 6¾c.
E. S. Miller, Valparaiso, Indiana.

HONEY PACKERS—Write us for prices and samples on California and Western Honeys. We stock all varieties. HAMILTON & COMPANY, 108 West Sixth Street, Los Angeles, California.

HONEY AND BEESWAX WANTED

WANTED—Extracted Honey. Send sample and price delivered to T. W. Burleson & Son, Waxahachie, Texas.

WANTED—Capping melter or dark grade honey. Edw. Klein, Gurnee, Ill.

WANTED—Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—White and Light Amber Honey. Carlots or less. Clover Blossom Honey Co., 712 Kossuth St., Columbus, Ohio.

SPOT CASH PAID FOR COMB AND EXTRACTED HONEY. Send samples and best price.
C. W. Aeppler Company, Oconomowoc, Wis.

WANTED—Carload or several truck loads of white extracted honey. Prefer delivered price. Old Taylor Honey Co., Chandler, Okla.

WANTED

WANTED TO TRADE—Nearly new Lobee honey pump for package bees or queens.
John A. Johnson, Pomeroy, Iowa.

WANTED—Reliable shipper to trade package bees for supplies.
Honey Brook Apiaries, Coxsackie, N. Y.

WANTED—Price on 100 two-pound packages or two-frame nuclei, for May 1st delivery. H. G. Quirin, Bellevue, Ohio.

WANTED — Clean active young man for work in my Michigan apiaries. Give age, weight, height, experience if any and wages expected, in first letter.
David Running, Sumterville, Alabama.

FOR EXCHANGE

NEW BEE SUPPLIES for honey or bees and queens. Dillon & Sons, Adrian, Michigan.

FOR SALE

FOR SALE—Complete equipment for small apiary. Cheap. Write for inventory and price. Homer Boone, 2609 McKinley Ave., Keokuk, Iowa.

FOR SALE—In Sunny Southern California—Nice home with about one acre of good land; beautifully situated near schools and junior college. Ideal for beekeeping headquarters as located in one of the best honey producing sections of the state. For sale with or without bees.
Box 18, American Bee Journal.

G. B. LEWIS BEEWARE and Dadant's Foundation for sale by H. L. Case, 156 West Ave., Canandaigua, New York.

CAPPINGS PRESS complete for uncapping honey and pressing cappings dry. Perfect condition. Write
A. D. Hiett, Box 683, Lynchburg, Va.

SUPPLIES

B. B. PLIERS & HIVE TOOL COMBINED. Practical frame lifter and holder, price $1.00. Scraper for quick clean work, price $1.00. CALIFORNIA BEE & TOOL CO., 810 W. Pedregosa St., Santa Barbara, Calif.

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

BEST QUALITY soft white pine Hoffman frames $30.00 per thousand. Complete line of bee supplies manufactured by us. All prices the lowest. Free catalog.
The Walter Kelley Co., Paducah, Ky.

WIRED FRAMES—Shipped k. d.; nail up perfectly, no warped combs. Let us prove it. Discount on trial order. Catalog free.
A. E. Wolkow Co., Hartford, Wis.

PORTER BEE ESCAPES save honey, money, avoid stings; faster most efficient. Sample 15c. R. & E. C. Porter, Lewistown, Ill.

SAVE QUEENS. Safin cages now 15c. Ten for $1.00.
Allen Latham, Norwichtown, Connecticut.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, $1.00; two years, $1.50. Sample, 3c stamp.
The Beekeepers Item, San Antonio, Texas.

Honor Roll

EXPLANATIONS ON THE HONOR ROLL—

Honor Roll covers memberships received during the period of January 1, 1935 and December 31, 1935.

*Indicates those members received through the Free Queen Offer made by the Stover Apiaries, Mayhew, Mississippi.

California

Adamson, George, Pomona $12.00
Allen, Lester, 251 N. Claremont, San Mateo ..... .50
Alexander, W. B., Route 1, Box 146, Hughson 1.50
Ambler, John A., 2644 22nd Avenue, Oakland ..... .50
Andrews & Darst, Corona 10.00
Babb, Edwin J., 126 S. Marengo Ave., Pasadena 1.00
*Baetcke, Max R., 8568 Lookout Mt. Rd., Hollywood 1.00
Baker, Dorwin L., Spring Valley 25.00
Banta & Wire, Los Molinos 10.00
Beatty, Wilford, Westmoreland 1.00
Bee Industries Ltd., Alhambra 10.00
Bell Apiaries, Orange 5.00
Bell, L. W., Orange ..... .50
Bettfreund, George, Galt 5.25
Bishop, Roy K., Route 1, Box 2, Orange 7.50
Broadwell, L., Ceres ..... .50
Brown, Chas. A. (Life Member), Saugus 2.00
Brown, George J., Fresno 10.50
Bryant & Cookinham, 6th & Main, Los Angeles 5.00
Buchanan, F. R., 242 N. Orange, Glendale 10.50
Burleson, T. C., Colusa 15.74
B-Z-B Honey Co., 361 E. Valley Blvd., Alhambra 7.50
Cal. Bee Breeders Assn. (J. E. Eckert) Davis 10.00
Chadwick, P. C., 426 W. Olive, Redlands 2.50
*Chandler, Chick, 8743 Wonderland Park, Hollywood 1.00
Chrisman, Henry, 1938 Berryman Ave., Berkeley ..... .50
Cole, L. B., Brawley 5.00
Crawford, H. J., Olive 6.50
Crawford, L. B., 311 N. McClay St., Santa Ana 10.00
Cohn, Harold F., 255 California St., San Francisco ..... .50
Craig, Walton Jr., Biggs 10.00
Crump, P. L., 1131 W. 8th St., Santa Ana 10.00
Davis Bros., Courtland 20.50
Dickinson, M. S., Box 817, Los Banos ..... .50
Eckert, J. E., Davis 6.00
Edwards, George T., Seeley 4.01
Emde, Earl, 727 S. Norwalk Blvd., Whittier 16.60
Evans Brothers, Durham 1.00
Evans, Wm., 1001 Bank of Amer. Bldg., Oakland ..... .50
Foss, R. B., Escondido 1.00
Gear, W., Kellogg ..... .50
Giddings, E. M., Blythe ..... .60
Gordon, George J., Route 1, Box 32A, Fullerton 1.00
Griaznov, Alex de, Mountain View ..... .50
Haberland, H. W., Walnut Creek 5.50
Hadfield, T. H., Grenada ..... .55
Hanson, George T., 267 4th St., Oakland ..... .50
Harris, J. W., Potrero 5.00
Hartman, Cary W., 1001 Bank of America Bldg., Oakland 15.50
Heath, Harry, 1342 Atlantic Ave., Long Beach 7.00
Hengy, A. M., Oroville, ... 20.83
Hepner, Jess, Covina 14.25
Hewes, W. G., Corona 5.00
Hill, Harry K., Willows ..... .50
Hinck, H. J., 2101 Lincoln, Alameda ..... .50
Honey Hill Apiary (J. B. Stuyvesant) Alpine 2.00
Hunt, H. H., 1654 Pico Blvd., Santa Monica 8.00
Jackson, G. T., 1094 Johnson Ave., San Diego 4.50
Kent, A. J., 4956 Fairfax, Oakland ..... .50
Kent, H. A., Fairfax Ave., Oakland 3.00
Kinzie, Chas. S., Arlington 6.50
Kinzie, Mrs. Chas. S., Arlington 1.00
Kittinger, Frank, Pomona 5.00
Knorr, F., Del Mar 1.00
Koehnen, Albert, Tracy 25.00
Koehnen, Carl, Glenn 25.00
Koster, E. R., Baker St., Petaluma ..... .50
Krebs, H. M., Dept. of Agr., Sacramento 10.50
Lane, E. F., 325 Davis, San Francisco ..... .50
Lauder, A. J., 346 Inez St., Fresno 2.50
LaBarre, R. E., Cottonwood ..... .50
Lechler, George M., Piru ..... .55
Lochwood, James A., 3327 Division Ave., Los Angeles 1.00
Lush, C. E., Orange 10.00
Mace, Aillen (Miss), Simi 5.00
Mack, C. E., Box 9, San Pedro 4.00
Marks, Mrs. Althea, Santa Paula 2.00
Marks, A. P., Santa Paula 5.00
Marks, R. C., Santa Paula ..... .50
Martens Read & Co., 321 Front St., San Francisco ..... .50
Mathews, A. L., Ceres 4.15
Mathiesen, J. L., Star Route, Santa Monica 1.00
McCormick, Owen R., 339 S. Detroit, Hollywood 5.50
Middleswart, A. E., Onyx 1.00
Miles, Margaret, San Bernardino 4.00
Miller, N. E., Colton ..... .50
Mills, Robert, 200 Carlton Ave., Anaheim 1.00
Moore, W. H., Winton ..... .50
Morris, G. L., Bonsall 5.00
Nicolaysen, T. L., Salida 27.65
Noel, M. E., Route 1, Box 17A, Delhi ..... .50
Oates, W. J., Lompoc 10.00
Peterman, H., Lathrop 5.00
Peyton, R. H., Fillmore 2.50
Phelan, James, Route 1, Box 174A, Fresno ..... .50
Pio, Jim, 4149 Wilkinson, N. Hollywood 4.00
Poore, Harvey, care of A. Koehnen, Tracy ..... .50
Rails, W. H., 1655 S. Clark, Orange 1.00
Reed, Robert H., Route 2, San Bernardino 4.00
Richardson, P. F., Box 64, Tulare 1.00
Rish, Fred L., Route 1, Box 377, Fresno 1.00
Roney, D. H., Route 3, Box 610, Modesto 3.00
San Bernardino Co. Honey Prod. Assn., (Mrs. H. M. Yates), Mentone 2.00
Segsworth, Wm., Grass Valley 1.00
Scharsch, Joe, Ords Ferry, Chico ..... .55
Schleicher, L. D., 905 E. Colorado, Pasadena 27.00
Severin, F. J., 1909 A. El. Cajou Ave., San Diego 1.50
Shasta Apiaries (F. W. Chapman), Shasta 1.85
Shepard, Mrs. Laura, 455 Washington, Calexico 12.00
Shiell, J. W., Atwater ..... .75
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This Honor Roll occupies several pages and will be continued in the March number. If your state is not included above, therefore, look for it in March or later issues. If any name is misspelled or if any name is omitted, please write at once to either the American Bee Journal or to American Honey Institute, Madison, Wisconsin.

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The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

As a result of the mention of Bee Creek in the January postscript I am getting a fine lesson in geography. It seems that there are all kinds of "bees" in the way of creeks, towns and what not. From J. N. Harris, of Saint Louis, Michigan, comes a long list including Bee, Nebraska; Bee Bayou, Louisiana; Beehive, Colorado, and Beehunter, Indiana. He also reminds me of a number of such places as Honey Creek, Alabama; Honey Pot, Pennsylvania, and Honey Island, Louisiana. Perhaps we may yet decide to compile the entire list of bees, queens and honeys and publish them together.

— : —

C. G. Fouts, of Parkville, Missouri, wries to tell me more about the Bee Creek first mentioned here. He mentions the origin of the name as related to one Ben Cornelis, of Platte County, who was the champion bee hunter. In 1828, when it got its name, he says that beeswax was locally worth 25 cents a pound but honey had no market value at all. The only battle of the Civil War fought in that vicinity was on Bee Creek. He also mentions several other places in which the word bee appears in the name.

— : —

Gene Kennedy, of Lawrence, Kansas, sends a clipping concerning a proposed dam across Bee Creek in southeastern Kansas, which will form a lake of about 3,500 acres. Perhaps we will then have a "Bee Lake."

— : —

A brief note from W. Hayne Robertson, of Pikeville, Tennessee, says that Bee Creek in Bledso County flows into Caney Fork immortalized by Opie Reed in "The Waters of Caney Fork," which having once drank you return and drink again before you die.

— : —

Ivan Gunter, North Dakota beekeeper, wintering in the lower Rio Grande Valley in south Texas, likes the climate and in order to keep busy in the winter months has bought a grapefruit grove. When his honey is disposed of in the fall, he can come south and harvest his citrus fruit. By the time that is disposed of he can go back to his bees in the North. Thus he becomes a honey producer in summer and a fruit grower in winter.

— : —

A winter honeyflow sometimes comes in south Texas from Pinkmint **(Stachys drummondi)**. It blooms throughout the month of January and at times yields surplus. Seems strange to a man from the Mid-West to see the bees storing honey when winter holds things tight at home.

— : —

Judging from the numerous reports which have come in regarding the balsam clover **(Trigonella)** often called blue flowered sweet clover, it must require a different kind of inoculation than that of the alfalfa or ordinary sweet clover. Numerous samples of seed were planted on land which had grown sweet clover for several years but the balsam clover, except in a few spots, was inclined to turn yellow and showed lack of thrift. Alfalfa when first introduced behaved in much the same manner, but grows well enough since the bacteria on which it depends became available.

— : —

J. Skovbo, of Hermiston, Oregon, writes concerning a locust tree **(Robinia semperflorens)**, which has proved of value to the beemen of northeastern Germany. As far as I can find it is not known in this country. Perhaps some of our readers have correspondents in that part of Germany who will send over some seed.

— : —

Jay Smith seems very enthusiastic about his new home at Ft. Myers, Florida. He writes that he is like the colored fellow at the revival who did not want to go to heaven because "Fot Myer is so good I don't want to take chances on making things woser."

I like the South very well in winter, but when summer comes, I will be anxious to get back to the Middle-West. I wonder if Jay won't sometimes dream of Indiana along about June.

A cordial invitation comes from Pedro Provansal to visit him in Uruapan, Michoasan, Mexico. He speaks of his section as a paradise and says that the bees get the best crop of the year in January. It would be a delightful experience to go so far south and to see something of a country which those who have been there report to be a wonderland.

— : —

My visits to Mexico have been very brief excursions across the northern border where there is but poor development in comparison to the finer cities farther south. In the North, the peons keep bees in boxes and twice each year cut out all the combs and melt them up, leaving the bees to return to the empty box to build anew.

— : —

Old timers here in the lower Rio Grande Valley of Texas say that there has never been so much cool and unpleasant weather in winter within their recollection. The extreme cold of the North has had its influence even down here and chilly days come all too often for the comfort of one who wishes to remain in the open air. Up to the time this is written, frost has come but rarely, thirty-two degrees being lowest recorded to date. Even such light freezing is sufficient to kill papayas, bananas and other tender vegetation. The bees stopped brood rearing and removed the drone brood from the hives.

— : —

I have been able to locate only one colony of the honey making wasps here in the valley and that high in a tree in the front yard of a Weslaco residence. Some years ago through the kindness of C. S. Engle, I had such a colony in Illinois and I would greatly enjoy taking another north next spring to see what it will do there. The former one swarmed and built a large paper nest in a tree not far from the Dadant factory. Insects that make paper nests like the hornets and store honey like bees are of unusual interest to me.

— : —

E. M. Cole writes that he looks for some heavy winter losses of bees in Iowa this winter. He recalls a long slow flow of very strong dark honey last fall which was packed into the brood nests. That with the long continued cold weather he expects to cause much dysentery. From all reports, this must be one of the winters that the old timers always talk about.

— : —

Several letters have come to me asking for suggestions in choosing a location for commercial honey production. Some ask for specific recommendations as to the best locality. So many things enter into the choice of a location that it is very difficult to offer such advice. The best location for one man might not be so good for a man of a different type. Then bee pastures change so much from year to year that what is a good location now may not be so good a few years hence.

— : —

I have visited several places which were formerly splendid bee territory where the beemen have been moving away during recent years because of changing conditions. Some have moved because of the use of poison in spraying fruit trees which killed their bees. Others have moved because the farmers have given up alfalfa for some other crop or have changed their practice and plow under sweet clover before it blooms instead of harvesting a crop of seed. Some Texas neighborhoods have been spoiled for the beekeeper by the clearing of the native mesquite, catsclaw and other honey plants, to give place for cultivated crops.

— : —

One should make very careful investigation of a locality before risking a move to a new situation. Not only the honey plants but the roads, markets and social conditions are important. It is never safe to risk the judgment of another in making such a decision.

FRANK C. PELLETT.

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